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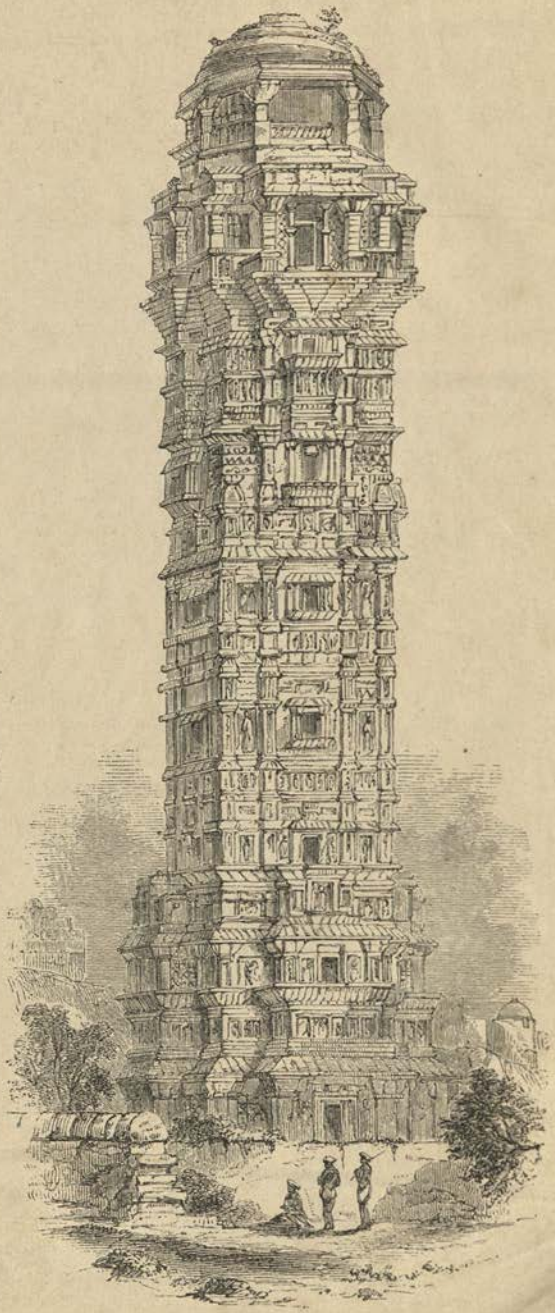

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BY JAMES FERGUSSON, M.R.I.B.A.,

AUTHOR OF 'PALACES OF NINEVEH AND PERSEPOLIS RESTORED.'

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PREFACE.

THERE are few branches of artistic or scientific research which have made such rapid and satisfactory progress during the last fifty years as those which serve to illustrate and elucidate the arts and architecture of bygone ages. Not only has an immense mass of new materials been collected, but new principles of criticism have been evolved, and studies which in the last century were the mere amusement of the amateur, and cultivated only as matters of taste, are now becoming objects of philosophical inquiry, and assuming a rank among the most important elements of historical research. Beyond this, which is perhaps the most generally attractive view of the matter, there is every reason to hope that the discovery now being made of the principles that guided architects in the production of their splendid works in former days, may ultimately enable us to equal, if not to surpass, all that has been hitherto done in architectural design.

With these inducements, added to the inherent beauty and interest which always attach themselves more or less to the objects of architectural art, the study of it ought to be one of the most useful as well as one of the most attractive which can occupy the attention of the public, and no doubt would be much more extensively cultivated were it not for the difficulties attending its pursuit.

Owing to the very nature of the subject, books that treat of architecture are generally large, and from the number and size of the illustrations required are also very costly, so that an architectural library is one of the most cumbersome as well as one of the most expensive that can be got together. But even among those who can collect it, few have the patience to study the plans, sections, and details which are indispensable for a scientific exposition of the various parts of a building; and after all, without some practical knowledge of the art of architecture, or some experience at least in plan drawing, it is almost impossible to restore a building so completely to the mind's eye, from a technical description, as to enable one who has not seen it to judge correctly of its form, and still less of its merits or its faults as a work of art. Even when the difficulties of understanding and realizing architectural language have been completely conquered, it

still requires years and years of study before the historical information scattered through hundreds of volumes on the principles of design can be mastered so as to enable the student to grasp the whole subject, or understand all its bearings.

The object of the present work is to remedy to some extent these inconveniences, and, by supplying a succinct but popular account of all the principal buildings of the world, to condense within the compass of two small volumes the essence of the information contained in the ponderous tomes composing an architectural library; and by generalizing all the styles known, and assigning to each its relative value, to enable the reader to acquire a more complete knowledge of the subject than has hitherto been attainable without deep study.

Up to the present time it has been hardly possible to accomplish this, and even now very much more information is required before it can be done satisfactorily for all styles; but on comparing this work with any of the older productions of its class, it is easy to see how much progress has been made, and how much nearer we are to completeness than we ever were before. At the time when Piranesi finished his splendid 'Illustrations of Architecture' (about the year 1783), the only styles known or thought worthy of attention were the Roman and the styles derived from it, with a dawning suspicion of the value of Greek art. Somewhat later (in 1800), when Durand published his famous 'Parallèle,' he devoted one plate out of sixty-three to Gothic art, and half a plate sufficed for all that was then known of Egyptian, while the Indian and many of the outlying styles were almost wholly unknown. Considerable progress had been made in 1811 when Agincourt published his celebrated work; but even then Gothic art was looked upon as a mere barbarous *décadence* from purer styles, and the revival of classic art was hailed as a real *renaissance* of true art to which the human intellect had awakened after the long night of the dark ages. By far the most comprehensive attempt made to supply the deficiency is that of Wiebeking, in a work completed in 1831. With truly German industry, he re-engraved every drawing he could collect of architectural objects, and described them all with most laudable patience; but from want of arrangement or of criticism, his work has little value beyond being a storehouse for future reference, and a landmark to show how much has been done even since it was completed.

Several other attempts have been made to supply the deficiency complained of by such works as those of Ramée and Batissier in France, and Gwilt's 'Encyclopædia of Architecture' in our own country, besides articles in all our principal encyclopædias; but none of these have quite met the difficulty, either from being too short or too exclusively popular, or from being mixed up with other matter to which illustration of the fine art architecture is made subordinate.

As these works have failed in utilising the immense mass of

information now available, either from being published too early or from other causes, it is believed that there is still room for another attempt, which, without being too popular, should yet be intelligible in every part to the general reader, and without attempting to be scientific, should from its comprehensiveness convey even to the professional artist a certain amount of knowledge not easily accessible to all. It can of course make no pretensions to compete with the splendid monographies of individual buildings which crowd the shelves of an architectural library, nor even with the separate and detailed histories of local styles. The study of these is indispensable to a perfect acquaintance with the subject, but even this may be facilitated by a general *résumé* of the whole.

One of the first difficulties of so extensive a subject is to make such an arrangement of the different styles as shall prevent any one being described before those which preceded it in time when there was any connexion between the two, and consequently before the preliminary steps by which it attained its form have been explained and elucidated. A strictly chronological arrangement will not meet this difficulty without frequent and abrupt interruptions of the continuity of the narrative, nor will one which is purely topographical. In the following pages a combination of the two methods has been attempted; and though it is only one of many that might be proposed, each of which would have some special merit of its own, still it seems to be the arrangement which meets to the greatest extent the real difficulties of the case. Except in one or two instances, there are no chronological inversions of any importance, nor any very marked interruption to the continuity of the narrative.

The first and most important division seems both obvious and convenient. By separating all architectural objects into Christian and non-Christian (the latter might be called heathen, or pagan, if these were not generally used as terms of reproach), we obtain two great divisions, very nearly equal in the importance of the objects described, and very easily distinguished from one another.

As the Christian styles in every instance arose out of the Pagan, which in almost all instances are the older, the Pagan of course take precedence; and if antiquity alone were considered, the Egyptian ought to be the first described: but in that case, after going through that style, and the Assyrian, which comes next, we naturally pass to the Greek and Roman, and the narrative must then be interrupted to make way for the Indian, the Mexican, and other styles, which have no connexion either with those which preceded, or which followed in other parts of the world. To avoid this a classification of a more topographical nature has been adopted; and commencing from the

East, all those styles which have no internal relation with those of the West are first described, such as the Indian, Chinese, Mexican, and other similar styles. Passing from these, another group presents itself in Western Asia, almost equally independent. This style arose on the banks of the Euphrates, and spread eastward to the Indus and westward to the shores of the Mediterranean, uninfluenced, so far as we can now see, by the styles on either hand.

Having in this manner got rid of these two great groups, the reader is at liberty to pursue without interruption the history of that great style which arose in Egypt, and which, when transplanted into Greece, and mellowed by the influence of Assyria, bloomed there into greater beauty than ever was known before, but only to perish with the civilization it represented in Imperial Rome.

Two great styles, the Christian and the Saracenic, sprung from the Roman, which was the great transitional style between the ancient and modern world. As the Christian was the earliest born, and the first to die, it might seem to claim precedence; but the Saracenic attained maturity as early as the age of Charlemagne, while the Gothic styles were still in their infancy. There is therefore no incongruity in treating it first and among the Pagan styles, nor any inconvenience felt from this course, as the influence of the Christian on the Saracenic style was never sufficiently important to render a previous knowledge of the former indispensable, except in the one instance of the Turkish style of Constantinople. But this style, at present at least, is too insignificant and too little known to require a change in classification to make room for it.

The Christian styles are easily divided into two great groups by a line drawn from the head of the Adriatic to near the entrance of the Gulf of Finland. All to the eastward of this line belongs to the Sclavonic races and the Byzantine school of art; all to the westward to the Teutonic and Celtic races and Gothic school. These are so distinct from one another, and so easily defined, that either might be taken up first, and treated independently of the other; but as the Gothic is certainly derived most directly from Rome, and is by far the most important style of the two, it seems natural to give it the precedence, and the Byzantine, which is half a European, half an Asiatic style of art, thus assumes its proper place as a supplement to the great Christian style of Western Europe. This is at least its true position in our present state of knowledge: further researches may entitle it to assume a higher ground.

The minor divisions of these styles are so fully explained in the text, that it is needless repeating here what is much more easily understood and appreciated in its proper place in the body of the work.

One great division of art still remains to be described before the subject is complete. It is that style which arose in the middle

of the fifteenth century, culminated with the rebuilding of St. Peter's at Rome, and has prevailed all over Europe during the last three centuries and a half. It is infinitely inferior to the Gothic, which preceded it, as an artistic form of art, but nearly as important from the size and splendour of the buildings in which it is employed, and fully as interesting to the philosophical student of the subject, not only for what it teaches, but because it is an index to the mind of Europe during the period in which it prevailed, and is the lesson all must study who would attempt to understand the future of the noble art of architecture.

Although every possible care has been taken in selecting the best authorities for the statements in the text of the work, as well as the subjects for illustration, still no one acquainted with the state of the literature of architecture will need to be told that in many branches the materials do not exist for a correct description of the style, and that the drawings which are available are frequently so inexact, and with scales so carelessly applied, that it is impossible at times to avoid error. The plans throughout the book are on too small a scale to render any minute errors apparent, but being drawn to one scale (100 feet to 1 inch), they are quite sufficient as a means of comparison, even when not mathematically correct. They thus enable the reader to judge of the relative size of two buildings by a mere inspection of the plans, as correctly as he could by seeing the two buildings themselves, without actually measuring them in all their details.

As a general rule, the sections or elevations of buildings, throughout the book, are drawn to a scale double that of the plans, or 50 feet to 1 inch; but, owing to the great size of many of them, it has been found impossible to carry out this in all instances: where it has not been effected, the departure from the rule is always noted, either below the woodcut or in the text.

No lineal dimensions are quoted in the text except such as it is believed can be positively relied upon, and in all instances these are reduced to English feet. The superficial measures, like the plans, are quite sufficient for comparison, though not to be relied upon as absolutely correct. One great source of uncertainty as regards them is the difficulty of knowing at times what should be included in the building referred to. Should, for instance, the Lady Chapel at Ely be considered an integral part of the Cathedral, or the Chapter-house at Wells? Should the sacristies attached to Continental cathedrals be considered as part of the church? or such semi-detached towers as the south-western one at Bourges? What constitutes the temple at Karnac, and how much of this belongs to the Hypostyle Hall? These and fifty other questions occur in almost every instance, which may lead two persons to very

different conclusions regarding the superficial dimensions of a building, even without the errors inherent in imperfect materials.

When either the drawing from which the woodcut is taken was without a scale, or the scale given could not be depended upon, "No scale" has been put under the cut to warn the reader of the fact. When the woodcut was either too large for the page, or too small to be distinct if reduced to the usual scale, a scale of feet has been added under it, to show that it is an exception to the rule.

Capitals, windows, and details which are meant to illustrate forms or construction, and not particular buildings, are drawn to any scale that seemed best to express the purpose for which they are inserted; when they are remarkable for size, or as individual examples, a scale has been added; but this is the exception, not the rule.

One object that has been steadily kept in view in this work has been to show that architecture may be efficiently illustrated by plates on a small scale, yet sufficiently clear to convey instruction to professional architects. Every pains has been taken to secure the greatest possible amount of accuracy, and in all instances the sources from which the woodcuts have been taken are indicated. Many of the illustrations are from original drawings, and of buildings never before published.

The above remarks with regard to the want of information or the incompleteness of illustration hardly apply to the Pagan styles. There are very few of those which might be classed under the head of "Non-Christian styles" which have not been as fully and as correctly illustrated as their importance deserves, though more information regarding some points would be both desirable and convenient. But very few of the Christian styles were illustrated at all at the beginning of this century, and even at this time such a country as Spain is almost a terra incognita to architects. Now, however, that people are getting satiated with the plaster prettinesses of the Alhambra, we may hope that attention will be turned to the grander and simpler works of the Christians in that country, and that this chapter will not remain the blank it has hitherto been.

The English Gothic is, of all the Christian styles, the one which has been most fully examined and illustrated; numberless books have been published on the subject in this country; and, as information is obtainable in almost any form regarding it, all that is attempted here is to compare it with other similar styles, and to place its merits in their true light relatively to the other forms of art brought under view in the various chapters of this work.

A most lamentable deficiency of information exists regarding the styles prevailing in all the countries occupied by the Turks, both in Europe and in Asia. Neither the Government nor the people of those countries will of course do anything to elucidate this subject, and hitherto religious jealousy has prevented access to mosques or churches

consecrated to Mahometan purposes; but these difficulties are fast disappearing, and as the subject is so interesting, and the materials so abundant, it is hoped that before long the Byzantine may be as perfectly understood as the Gothic styles of architecture. Even at present I know of the existence of unpublished drawings almost sufficient for this purpose. Those made by M. Charles Texier would in themselves almost suffice, and many others exist in the portfolios of those who have visited the country. Many of these are kept back from the idea that their authors may find an opportunity of publishing them themselves, a few from an unwillingness that others should profit by the labours of those who made them, but far more from their authors not knowing how or when to render them available to the public. I am not without hopes that if this work attain a certain amount of circulation, those who possess drawings or information to which I have not access may be induced to lend them to me for the purpose of correcting errors or of supplying deficiencies. If this is done, there will be no difficulty in rendering a second edition of this work far more complete and more worthy of the noble subject it is intended to illustrate than it can pretend to be at present.

In the mean time I have to thank my friends Messrs. Pentland, F. Penrose, Edward Falkener, and Gawen, as well as Messrs. Billings, Wilkinson, and others who have lent me either woodcuts or the materials for them, and so assisted materially in enriching the illustration of the work; and above all I have to thank the Rev. Charles Penrose for the invaluable assistance he has afforded me in passing the work through the press.

All the woodcuts executed expressly for the work were engraved by Mr. Robert Branston, and it need hardly be remarked that they are done with his accustomed clearness and accuracy.

In conclusion, it is earnestly requested that those whose superior knowledge enables them to detect errors or to supply deficiencies will kindly communicate their observations to the author, whose most earnest desire in publishing this work is to place in the hands of the public a book which shall be deemed worthy of that noble art to the study of whose principles he has devoted the best years of his life and the best energies of his mind.

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ERRATA.

Page 332, *for* "Baths of Diocletian," *read* "Baths of Caracalla."
Page 584, *for* "Swartz Rheindorf," *read* "Schwartz Rheindorf."

INTRODUCTION.

FEW questions are more frequently asked, and few have hitherto been more difficult to answer satisfactorily, than the inquiry, "*What is architecture?*" "*What are the true principles which ought to guide us in designing or criticising architectural objects?*"

Fifty years ago the answers to these questions generally were, that architecture consisted in the closest possible imitation of the forms and orders employed by the Romans; that a church was well designed exactly in the proportion in which it resembled a heathen temple; and a civic building was to be measured by its imitation, more or less perfect, of some palace or amphitheatre of classic times.

In the beginning of this century these answers were somewhat modified by the publication of Stuart's works on Athens; the word Grecian was substituted for Roman in all criticisms, and the few forms that remained to us of Grecian art were repeated *ad nauseam* in buildings of the most heterogeneous class and character.

At the present day churches have been entirely removed from the domain of classic art, and their merit is made to depend on their being correct reproductions of mediæval designs. Museums and town-halls still adhere to classic forms, alternating between Greek and Roman; while some of our public buildings attempt to reproduce the middle ages, and palaces and clubhouses adhere to that compromise between classicality and common sense which is generally called Italian. These, it is evident, are the mere changing fashions of art. There is nothing real or essential in this Babel of styles, and we must go deeper below the surface to enable us to obtain a true definition of the art or of its purposes. Before attempting this, it is essential to bear in mind that two wholly different systems of architecture have prevailed at different periods in the world's history.

The first is that which prevailed in Egypt, in Greece, and in all Europe, during the middle ages, and generally in all countries of the world down to the time of the Reformation in the 16th century, and still prevails in remote corners of the globe wherever European civilization or its influences have not yet penetrated. The other was that which was introduced with the revival of classic literature contemporaneously with the reformation of religion, and still pervades all Europe, and wherever European influence has established itself.

In the first period the art of architecture consisted in designing a building so as to be most suitable and convenient for the purposes it was wanted for, in arranging the parts so as to produce the most

stately and ornamental effect consistent with its uses, and applying to it such ornament as should express and harmonise with the construction, and be appropriate to the purposes of the building; while at the same time the architects took care that the ornament should be the most elegant in itself which it was in their power to design.

Following this system, not only the Egyptian, the Greek, and the Gothic architects, but even the indolent and half-civilised inhabitants of India, the stolid Tartars of Thibet and China, and the savage Mexicans, succeeded in producing great and beautiful buildings. No race, however rude or remote, has failed, when working on this system, to produce buildings which are admired by all who behold them, and are well worthy of the most attentive consideration. Indeed it is almost impossible to quote one single building in any part of the world, erected during the prevalence of true art, which was not thought beautiful, not only by those who erected it, but which remains a permanent object of admiration and of study for all future ages.

The result of the other system is widely different from this. It has now been practised in Europe for more than three centuries, and by people who have more knowledge of architectural forms, more constructive skill, and more power of combining science and art to effect a great object, than any people who ever existed before. Notwithstanding this, from the building of St. Peter's at Rome to that of our own Parliament Houses, not one building has been produced that is admitted to be entirely satisfactory, or which permanently retains a hold on general admiration. Many are large and stately to an extent almost unknown before, and many are ornamented with a profuseness of which no previous examples exist; but with all this, though they conform with the passing fashion of the day, they soon become antiquated and out of date, and men wonder how such a style could ever have been thought beautiful, just as we wonder how any one could have admired the female costumes of the last century which captivated the hearts of our grandfathers.

It does not require us to go very deep into the philosophy of the subject to find out why this should be the case; the fact simply being that no sham was ever permanently successful, either in morals or in art, and no falsehood ever remained long without being found out, and when detected it inevitably ceases to please. It is literally impossible that we should reproduce either the circumstances or the feelings which gave rise to classical art, and made it a real thing; and though Gothic art was a thing of our country and of our own race, it belongs to a state of society so totally different from anything that now exists, that any attempt to reproduce it now must at best be a masquerade, and never can be a real or an earnest form of art. The designers of the Eglinton tournament carried the system to a perfectly legitimate conclusion when they attempted to reproduce the costumes and warlike exercises of our ancestors; and the pre-Raphaelite painters were as fully justified in attempting to do in painting what was done every day in architecture. Both attempts failed signally, because we had progressed in the arts of war and painting, and could easily detect the absurdity of

the practices. It is in architecture alone that the false system remains, and we do not yet perceive the impossibility of its leading to any satisfactory result.

Bearing this distinction in mind, let us try if we can come to a clearer definition of what this art really is, and in what its merits consist. Let us suppose Diagram No. I. to represent a cotton-factory,

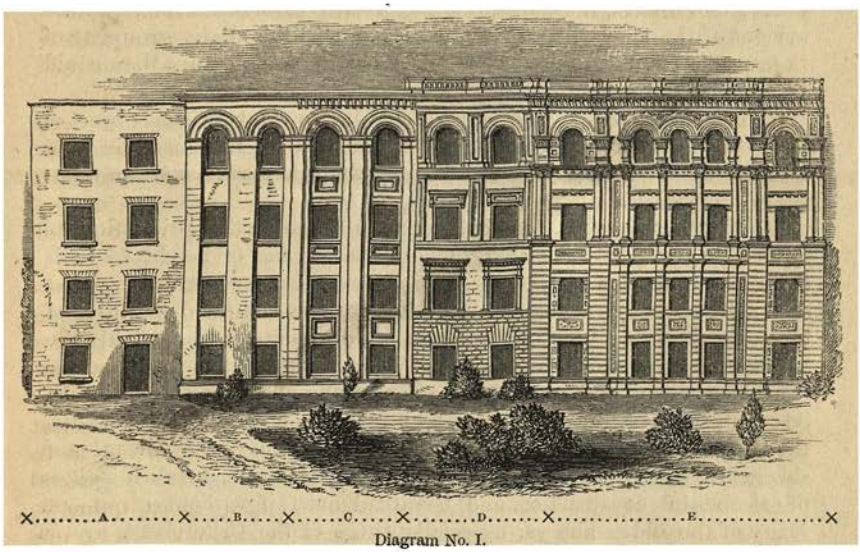

Diagram No. I.

a warehouse, or any very common-place utilitarian building. The first division, A, is not only the most prosaic form of building, but is bad building, as no attempt is made to strengthen the parts requiring it, and no more thought is bestowed upon it than if it were a garden wall or a street pavement. The second division, B, is better: the arching of the upper windows binds together the weakest parts, and gives mass where it is most needed to resist the pressure or thrust of the roof; and the carrying down the piers between the windows gives strength where wanted. In this stage the building belongs to civil engineering, which may be defined as the art of disposing the most suitable materials in the most economical but scientific manner to attain a given utilitarian end. In the third division, C, this is carried still farther; the materials are better disposed than in the last example, and even without the slight amount of ornament applied, it is a better example of engineering. The ornament is not more than would be considered in some states of society indispensable for even the most utilitarian buildings. The cornice may be said to be required to protect the wall from wet; the consoles to support it; and the mouldings at the springing of the arch may be insertions required for stability. In the present day, however, even this slight amount of ornament is almost sufficient to take it out of the domain of useful art into that of architecture. The fourth division, D, is certainly within the

limits of the province of architecture; and though it may be bad art, still the amount of ornament applied, all other things remaining the same, entitles this division to rank as a work of the fine art, architecture. The fifth division, E, carries the advance still farther. In this instance not only is a greater amount of ornament applied, but the parts are so disposed as in themselves to produce a more agreeable effect; and although the height of the floors remains the same, and the amount of light introduced very nearly so, still the slight grouping of the parts is such as to produce a better class of architecture than could be done by the mere application of any amount of ornament.

If it is admitted that the last division in the diagram is an object of architecture, which the first is not, it follows from this analysis that architecture is nothing more or less than the art of *ornamental and ornamented construction.*

Taking, for instance, the Parthenon, to illustrate this principle farther. The proportions of length to breadth, and of height to both these, are instances of carefully-studied ornamental construction; and still more so is the arrangement of the porticos and the disposition of the peristyle. If all the pillars were plain square piers, and all the mouldings square and flat, still the Parthenon could not fail, from the mere disposition of its parts, to be a pleasing and imposing building. So it is with a Gothic cathedral. The proportion of length to breadth, the projection of the transepts, the different height of the central and side aisles, the disposition and proportion of the towers, are all instances of ornamental construction, and beautiful even if without ornament. Many of the older abbeys, especially those of the Cistercians, are as devoid of ornament as a modern barn; but from the mere disposition of their parts they are always pleasing, and if large, are imposing objects of architecture. Stonehenge is an instance of ornamental construction wholly without ornament, yet it is almost as imposing an architectural object as any of the same dimensions in any part of the world. It is, however, when ornament is added to this, and that ornament is elegant in itself, and appropriate to the construction and to the purposes of the building, that the temple or the cathedral ranks among the highest objects of the art, and becomes one of the noblest works of man.

Even without ornamental construction, a building may, by mere dint of ornament, become an architectural object, though it is far more difficult to attain good architecture by this means, and in true styles it was seldom attempted. Still such a building as the town-hall at Louvain, which if stripped of its ornaments would be little better than a factory, by richness and appropriateness of ornament alone has become a very pleasing specimen of the art. In modern times it is too much the fashion to attempt to produce architectural effects not only without attending to ornamental construction, but often in defiance of and concealing the construction that exists. When this is done, the result must be bad art, but nevertheless it is architecture, however execrable it may be.

If these premises are correct, the art of the builder consists in

merely heaping materials together, so as to attain the desired end in the speediest and readiest fashion. The art of the civil or military engineer consists in selecting the best and most appropriate materials for the object he has in view, and using these in the most scientific manner, so as to ensure an economical but satisfactory result. Where the engineer leaves off, the art of the architect begins. His object is to arrange the materials of the engineer, not so much with regard to economical as to artistic effects, and by light and shade, and outline, to produce a form that in itself shall be permanently beautiful. He then adds ornament, which by its meaning doubles the effect of the disposition he has just made, and by its elegance throws a charm over the whole composition.

Viewed in this light, it is evident that there are none of the objects which are usually delegated to the civil engineer which may not be brought within the province of the architect. A bridge, an aqueduct, the embankment of a lake, or the pier of a harbour, are all as legitimate subjects for architectural ornament as a temple or a palace. They were all so treated by the Romans, and in the middle ages, and are so treated up to the present day in the remote parts of India, and wherever true art prevails.

It is not necessary that the engineer should know anything of architecture, though it certainly would be better in most instances if he did; but, on the other hand, it is indispensably necessary that the architect should understand construction. Without that knowledge he cannot design; but it would be well if, in most instances, he could delegate the mechanical part of his task to the engineer, and so restrict himself entirely to the artistic arrangement and the ornamentation of his design. This division of labour is essential to success, and was always practised where art was a reality; and no great work should be undertaken without the union of the two. Perfect artistic and perfect mechanical skill can hardly be found combined in one person, but it is only by their joint assistance that a great work of architecture can be produced. A building may be said to be architectural in the proportion in which the artistic or ornamental purposes are allowed to prevail over the mechanical; and an object of engineering, where the utilitarian exigencies of the design are allowed to prevail over the artistic. But it is nowhere possible to draw the line sharply between the two, nor is it desirable to do so. Architecture can never descend too low, nor need it ever be afraid of ornamenting too mean objects; while, on the other hand, good engineering is absolutely indispensable to a satisfactory architectural effect of any class. The one is the prose, the other is the poetry of the art of building.

One great cause of the confusion which has arisen in applying principles of criticism, or in defining architecture, is to be found in persons applying to the constructive art of architecture principles derived from the imitative arts of painting or sculpture, while in fact no two things could in reality be more essentially different.

Neither painting nor sculpture were ever useful arts except in the most barbarous times, and by the most remote analogy. Their object

is to tell a story, to reproduce an emotion, or to portray a scene or object of nature; and they effect this by a direct imitation, more or less correct and literal, of what actually exists, either in nature or in art. Architecture, on the other hand, was originally one of the useful arts, invented to provide for one of the three great wants of man—food, clothing, and shelter. The wigwam grew into a hut, the hut into a house, the house into a palace, and the palace into a temple, by well-defined and easily-traced gradations; but it never lost the original idea of a shelter, and in its most magnificent form it is a mere amplification of the original hut, but grown so solid that it seems designed to last for ever, and so well-proportioned and so exquisitely ornamented that, instead of being one of the most commonplace, it ranks with the most beautiful productions of man's hands. In none of its stages is imitation an element of composition; no true building ever was designed to look like anything in either the animal, vegetable, or mineral kingdoms. In all instances it is essentially a creation of man's mind, and designed to subserve some practical purpose which he has in view. A building can tell no story, and it is only by inference that it can be made to express an emotion.

It is true that painting and sculpture may be added to a building to any extent, and a really perfect building is never without these adjuncts; but they are not, or at least never should be, essentials, and the building should be always complete without them. All our cathedrals were so adorned in the middle ages, and in almost all instances this ornament has been swept away. Still the buildings remain complete in themselves as works of architecture, though as grand artistic compositions their value was no doubt doubled by the association: but this does not justify us in judging of the canvas by the same rules that we would judge of the picture that may be painted upon it, or of the marble by the figure that may be carved out of it.

The fact is that architecture is in its origin as essentially a useful art as weaving or shipbuilding, but almost alone of all her sister-arts it is the one that has, from various concurrent circumstances, been refined into a fine art. When inspired with so lofty an aim as that of providing a house or temple worthy of the Deity, it became one of the noblest and most beautiful of man's creations, but still essentially of human design in all its parts, and never striving to imitate nature, except in copying, as far as man's finite intelligence can do, those perfect principles of design which pervade every natural production, to be found wherever man's knowledge extends throughout the whole universe of God.

The most convenient place for explaining the principles of architecture is when describing and criticising the various buildings which form the subject of the body of the work; but it may materially assist the reader to judge of the various styles and specimens of architecture described in the following pages, if the leading principles and elements of the art are collected and enumerated as briefly as can be done consistently with clearness.

II.—Mass.

The first and most obvious element of architectural grandeur is size—a large edifice being always more imposing than a small one; and when the art displayed in two buildings is equal, their effect is almost in the direct ratio of their dimensions. In other words, if one temple or church is twice or three times as large as another, it is twice or three times as grand or as effective. The Temple of Theseus differs very little, except in dimensions, from the Parthenon, and, except in that respect, hardly differed at all from the Temple of Jupiter at Elis, but because of its smaller size it must rank lower than the greater examples. In our own country many of our smaller abbeys or parish churches display as great beauty of design or detail as our noblest cathedrals, but, from their dimensions alone, they are insignificant in comparison, and the traveller passes them by, while he stands awe-struck before the portals or under the vault of the larger edifices.

The pyramids of Egypt, the topes of the Buddhists, the mounds of the Etruscans, depend almost wholly for their effect on their dimensions. The Romans understood to perfection the value of this element, and used it in its most unsophisticated simplicity to obtain the effect they desired. In the middle ages the architects not only aspired to the erection of colossal edifices, but they learnt how they might greatly increase the apparent dimensions of a building by a scientific disposition of the parts and a skilful arrangement of ornament, making it look very much larger than it really was. It is in fact the most obvious, though it must be confessed perhaps the vulgarest, means of obtaining architectural grandeur, and it is also the most certain; but a true and perfect example can never be produced by dependence on this alone, and it is only when combined with beauty of proportion and elegance of ornament that perfect architecture is produced.

III.—Stability.

Next to size the most important element is stability. By this is meant, not merely the strength required to support the roof or to resist the various thrusts and pressures, but that excess of strength over mere mechanical requirement which is necessary thoroughly to satisfy the mind, and to give to the building a monumental character, and an appearance as if it could resist the shocks of time or the violence of man for ages yet to come.

No people understood the value of this so well as the Egyptians. The form of the Pyramids is designed wholly with reference to stability, and even the Hypostyle Hall at Karnac excites admiration far more by its eternity and strength than by any other element of design. All utilitarian exigencies and many other obvious means of effect are sacrificed to this, and with such success that after 3000 years still enough remains for the admiration which even the most unpoetical spectators cannot withhold from its beauties.

In a more refined style much of the beauty of the Parthenon arises from this cause. The area of each of the pillars of the Pantheon at Rome is under 20 ft., that of those of the Parthenon is over 33 ft., and, considering how much taller the former are than the latter, it may be said that the pillars at Athens are twice as massive as those of the Roman temple, yet the latter have sufficed not only for mechanical, but for many points of artistic stability; but the strength and solidity of the portico of the Parthenon, without taking into consideration its other points of superiority, must always render it more beautiful than the other.

The massiveness which the Normans and other early Gothic builders imparted to their edifices arose more from clumsiness and want of constructive skill than from design; but, though arising from so ignoble a motive, its effect is always grand, and the rude Norman nave often surpasses in grandeur the airy and elegant choir which was afterwards added to it. In our own country no building is more entirely satisfactory than the nave at Winchester, where the width of the pillars exceeds that of the aisles, and the whole is Norman in outline, though Gothic in detail. On the other hand, no building of its dimensions and beauty of detail can well be so unsatisfactory as the choir at Beauvais. Though it has stood the test of centuries, it looks so frail, requires so many props to keep it up, and is so evidently an overstrained exercise of mechanical cleverness, that though it may excite wonder as an architectural *tour de force*, it never can satisfy the mind of the true artist, or please to the same extent as less ambitious examples.

Even when we descend to the lowest walks of architecture we find this principle prevailing. It would require an immense amount of design and good taste to make the thin walls and thinner roof of a brick and slated cottage look so picturesque or so well as one built of rubble-stone, or even mud walls, and with a thatched roof: the thickness and apparent solidity of the one will always be more satisfactory than the other. Here, as in most cases, necessity controls the architect; but when fettered by no utilitarian exigencies, there is no safer or readier means of obtaining an effect than this, and when effect alone is sought it is almost impossible for an architect to err in giving too much solidity to his building. Size and stability are alone sufficient to produce grandeur in architectural design, and, where sublimity is aimed at, they are the two elements most essential to its production, and are indeed the two without which it cannot possibly be attained.

IV.—Materials.

Another very obvious mode of obtaining architectural effect is by the largeness or expensiveness of the materials employed. A terrace, or even a wall, if composed of large stones, is in itself an object of considerable grandeur, while one of the same lineal dimensions and of the same design, if composed of brick or rubble, may appear a very contemptible object.

Like all the more obvious means of architectural effect, the Egyptians seized on this and carried it to its utmost legitimate extent. All their buildings, as well as their colossi and obelisks, owe much of their grandeur to the largeness of the materials employed in their construction. The works called Cyclopean found in Italy and Greece have no other element of grandeur than the size of the stones or rather masses of rock which the builders of that age were in the habit of using. In Jerusalem nothing was so much insisted upon by the old writers, or is so much admired now, as the largeness of the stones employed in the building of the Temple and its substructions.

We can well believe how much value was attached to this when we find that in the neighbouring city of Baalbec stones were used of between 60 and 70 ft. in length, weighing as much as the tubes of the Britannia Bridge, for the mere coping of a terrace wall. Even in a more refined style of architecture, a pillar, the shaft of which is of a single stone, or a lintel or architrave of one block, is always a grander and more beautiful object than if composed of a number of smaller parts. It is easy to see that this arises from the same feeling to which massiveness and stability address themselves. It is the expression of giant power and the apparent eternity of duration which they convey; and in whatever form that may be presented to the human mind, it always produces a sentiment tending towards sublimity, which is the highest effect at which architecture or any other art can aim.

The Gothic architects ignored this element of grandeur altogether, and sought to replace it by the display of constructive skill in the employment of the smaller materials they used, but it is extremely questionable whether in so doing they did not miss one of the most obvious and most important elements of architectural design.

Besides this there is another element in the mere material which is a cause of architectural effect; it is that of value, though it is by no means so easy to point out why this should be the case. Still we all admire an ornament of pure gold more than one that is only silver gilt, though few can detect the difference. Persons will travel hundreds of miles to see a great diamond or wonderful pearl, who would not go as many yards to see paste models of them, though if the two were laid together on the table very few indeed could distinguish which was the real, which the counterfeit.

From something of the same feeling we admire a marble building more than one of stone, though the colour of the latter may be really more beautiful and the material at least as durable. In the same manner a stone edifice is preferred to one of brick, and brick to wood and plaster; but even these conditions may be reversed by the mere question of value. If a brick and a stone edifice stand close together, the design of both being equally appropriate to the material employed, but if the bricks are so beautifully moulded, or made of such precious clay, or so carefully laid, that the brick edifice cost twice as much as the other, our judgment would be turned, and we should look with more respect and admiration on the artificial than on the

natural material. From the same reason many elaborately carved wooden buildings, notwithstanding the smallness of their parts and their perishable nature, are more to be admired than larger and more monumental buildings, and this merely in consequence of the evidence of labour and consequent cost that have been bestowed upon them.

Irrespective of these considerations, many building materials are invaluable from their own intrinsic merits. Granite is one of the best known from its hardness and durability, marble from the exquisite polish it takes, and also for its colour, which for internal decoration is a property that can hardly be over-estimated. Stone is valuable on account of the largeness of the blocks that can be obtained, and because it easily receives a polish sufficient for external purposes. Bricks are excellent for their cheapness and the facility with which they can be used, and they may also be moulded into forms of great elegance, but sublimity is nearly impossible in brickwork, without at least such dimensions as have rarely been attained by man; the smallness of the material is such a manifest incongruity with the largeness of the parts, that even the Romans could not overcome the difficulty.

Plaster is another artificial material. Except in monumental erections it is superior to stone for internal purposes, and always better than brick from the uniformity and smoothness of its surface, the facility with which it is moulded, and its capability of receiving painted or other decorations to any extent.

Wood should only be used externally on the smallest and least monumental class of buildings, and even internally is generally inferior to plaster. It is dark in colour, liable to warp and split, and combustible, which are all serious objections to its use, except for flooring, doors, and such purposes as it is now generally applied to.

Cast iron is another material rarely brought into use, though more precious than any of those above enumerated, and possessing more strength, though probably less durability. Where lightness combined with strength is required, it is invaluable, and may be moulded into any form of beauty that may be designed, but it has hardly yet ever been used so as to allow its architectural qualities to be appreciated.

All these materials are nearly equally good when used honestly each for the purpose for which it is best adapted; they all become bad either when used for a purpose for which they are not appropriate, or when one material is used either in the place of or to imitate another. Grandeur and sublimity can only be reached by the more durable and more massive class of materials, but beauty and elegance are attainable in all, and the range of architectural design is so extensive that it is absurd to limit it to one class either of natural or of artificial materials, or to attempt to proscribe the use of some, and to insist on that of others, for purposes to which they are manifestly inapplicable.

V.—Construction.

Construction has been shown to be the chief aim and object of the engineer; with him it is all in all, and to construct scientifically and at the same time economically is the beginning and end of his endeavours. It is far otherwise with the architect. Construction ought to be his handmaid, useful to assist him in carrying out his design, but never his mistress, controlling him as to the mode of executing what he would otherwise think expedient. An architect ought always to allow himself such a margin of strength that he may disregard or play with his construction, and in nine cases out of ten the money spent in obtaining this solidity will be more effective architecturally than twice the amount expended on ornament, however elegant or appropriate that may be.

So convinced were the Egyptians and Greeks of this principle that they never used any other constructive expedient than a perpendicular wall or prop, supporting a horizontal beam, and half the satisfactory effect of their buildings arises from their adhering to this simple though expensive mode of construction. They were perfectly acquainted with the use of the arch and its properties, but they knew that its employment would introduce complexity and confusion into their designs, and therefore they wisely rejected it. Even to the present day the Hindus refuse to use the arch, though it has long been employed in their country by the Mahometans. As they quaintly express it, "An arch never sleeps," and it is true that by its thrust and pressure it is always tending to tear a building to pieces; in spite of all counterpoises, whenever the smallest damage is done, it hastens the ruin of a building, which, if more simply constructed, might last for ages.

The Romans were the first who introduced a more complicated style. They wanted larger and more complex buildings than had been before required, and they also employed brick to a great extent even in their temples and most monumental buildings. They obtained both space and variety by these means, with comparatively little trouble or expense; but we miss in all their works that repose and harmony which is the great charm that pervades the buildings of their predecessors.

The Gothic architects went even beyond the Romans in this respect. They prided themselves on their constructive skill, and paraded it on all occasions, and often to an extent very destructive of true architectural design. The lower story of a French cathedral is generally very satisfactory; the walls are thick and solid, and the buttresses, when not choked up with chapels, just sufficient for shadow and relief; but the architects of that country were seized with a mania for clerestories of gigantic height, and which should appear internally mere walls of painted glass divided by mullions. This could only be effected either by encumbering the floor of the church with piers of inconvenient thickness or by a system of buttressing outside. The

latter was the expedient adopted; but notwithstanding the ingenuity with which it was carried out, and the elegance of many of the forms and ornaments used, it was singularly destructive of true architectural effect. It not only produces confusion of outline and a total want of repose, but it is eminently suggestive of weakness, and one cannot help feeling that if one of these props were removed, the whole would tumble down like a house of cards.

This was hardly ever the case in England: the less ambitious dimensions employed in this country enabled the architects to dispense in a great measure with these adjuncts, and when flying buttresses are used, they look more as if employed to suggest the idea of perfect security than as necessary to stability. Owing to this cause the French never were able to construct a satisfactory vault in consequence of the weakness of their supports; they were forced to stilt, twist, and dome their vaults to a most unpleasing extent, and to attend to constructive instead of artistic necessities. With the English architects this never was the case; they always were able to design their vaults in such forms as they thought would be most beautiful artistically, and, owing to the greater solidity of their supports, to carry them out as designed.[1]

It was left for the Germans to carry this system to its acme of absurdity. Half the merit of the old Round arched Gothic cathedrals on the Rhine consists in their solidity and the repose they display in every part. Their walls and other essential constructions are always in themselves sufficient to support the roofs and vaults, and no constructive contrivance is seen anywhere; but when the Germans adopted the pointed style, their builders—they cannot be called architects—seemed to think that the whole art consisted in supporting the widest possible vaults on the thinnest possible pillars, and in constructing the tallest windows with the most attenuated mullions. The consequence is, that though their constructive skill still excites the wonder of the mason or engineer, the artist or the architect turns from the cold vaults and lean piers of their later cathedrals with a painful feeling of unsatisfied expectation, and wonders how such dimensions and such details should produce so utterly unsatisfactory a result.

So many circumstances require to be taken into consideration that it is impossible to prescribe any general rules in such a subject as this, but the following table will explain to a certain extent the ratio of the area to the points of support in sixteen of the principal buildings of the world.[2] As far as it goes, it tends to prove that the satisfactory architectural effect of a building is nearly in the inverse ratio to the mechanical cleverness displayed in its construction.

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[1] It may be suggested that the glory of a French clerestory filled with stained glass made up for all these defects, and it may be true that it did so; but in that case the architecture was sacrificed to the sister art of painting, and is not the less bad in itself because it enabled that art to display its charms with so much brilliancy.

[2] The numbers in the table must be taken only as approximative, except the last four, which are borrowed from Gwilt's 'Public Buildings of London.'

	Area.	Solids.	Ratio in Decimals.	Nearest Vulgar Fractions.
	Feet.	Feet.		
Hypostyle Hall, Karnac .	94,437	46,538	·496	One-half.
Spires Cathedral . . .	56,737	12,076	·216	One-fifth.
Bourges Cathedral . .	61,590	11,091	·181	One-sixth.
Parthenon, Athens . .	23,140	4,430	·148	One-seventh.
Chartres Cathedral . .	68,261	8,886	·130	One-eighth.
Salisbury Cathedral . .	55,853	7,012	·125	One-eighth.
Paris, Notre Dame . .	64,108	7,852	·122	One-eighth.
Cologne Cathedral . . .	81,464	9,554	·117	One-ninth.
Milan Cathedral . . .	108,277	11,601	·107	One-tenth.
York Cathedral . . .	72,860	7,376	·101	One-tenth.
St. Ouen, Rouen . . .	47,107	4,637	·097	One-tenth.
Temple of Peace . . .	68,000	6,928	·101	One-tenth.
St. Peter's, Rome . . .	227,000	59,308	·261	One-fourth.
Sta. Maria, Florence . .	84,802	17,056	·201	One-fifth.
St. Paul's, London . .	84,311	14,311	·171	One-sixth.
Ste. Geneviève, Paris . .	60,287	9,269	·154	One-sixth.

At the head of the list stands the Hypostyle Hall, and next to it practically is the Parthenon, which being the only wooden-roofed building in the list, its ratio of support in proportion to the work required is nearly as great as that of the temple at Karnac. Spires only wants better details to be one of the grandest edifices in Europe, and Bourges, Paris, Chartres, and Salisbury are among the most satisfactory Gothic cathedrals we possess. St. Ouen, notwithstanding all its beauty of detail and design, fails in this one point, and is certainly deficient in solidity. Cologne and Milan would both be very much improved by greater massiveness; at York the lightness of the supports is carried so far that it never can be completed with the vaulted roof originally designed for the nave at least; and the Temple of Peace is so clever a piece of engineering, that it must always have been a failure as an architectural design.

The last four buildings have quite sufficient strength for architectural effect, but the value of this is lost from concealed construction, and because the supports are generally grouped into a few great masses, the dimensions of which cannot be estimated by the eye. A Gothic architect would have divided these masses into twice or three times the number of the piers used in these churches, and by employing ornament designed to display and accentuate the construction, would have rendered these buildings far more satisfactory than they are.

In this respect the great art of the architect consists in obtaining the greatest possible amount of unencumbered space internally, consistent in the first place with the requisite amount of permanent mechanical stability, and next with such an appearance of superfluity of

strength as shall satisfy the mind that the building is calculated to last for ages.

VI.—Forms.

It is extremely difficult to lay down any general rules as to the forms best adapted to architectural purposes, as the value of a form in architecture depends wholly on the position in which it is placed, and the use to which it is applied; and there is in consequence no prescribed form, however ugly it may appear at present, that may not one day be found to be the very best for a given purpose, and in like manner none of those most admired which may not become absolutely offensive when used in a manner for which it is unsuited. In itself no simple form seems to have any inherent value of its own, and it is only by their combination one with another that they become effective. If, for instance, we take a series of twenty or thirty figures, placing a cube at one end as the most solid of angular, and a sphere at the other as the most perfect of round shapes, it would be easy to cut off the angles of the cube in successive gradations till it became a polygon of so many sides as to be nearly curvilinear. On the other hand by modifying the sphere through all the gradations of conic sections, it might meet the other series in the centre without there being any abrupt distinction between them. Such a series might be compared to the notes of a piano. We cannot say that any of the base or treble notes is in itself more beautiful than the others. It is only by a combination of several notes that harmony is produced, and gentle or brilliant melodies by their fading into one another, or by strongly marked contrasts. So it is with forms: the square and angular are expressive of strength and power; curves of softness and elegance; and beauty is produced by effective combination of the right-lined with the curvilinear.[1] It is always thus in nature. Rocks and all the harder substances are rough and angular, and marked by strong contrasts and deep lines. Even among trees the oak is rugged, and its branches are at right angles to its stem, or to one another. The lines of the willow are rounded, and flowing. The forms of children and women are round and full, and free from violent contrasts; those of men are abrupt, hard, and angular in proportion to the vigour and strength of their frame.

In consequence of these properties, as a general rule the square parts ought always to be placed below, where strength is wanted, and the rounded above. If, for instance, a tower is to be built, the lower story should not only be square, but should be marked by buttresses or other strong lines, and the masonry rusticated, so as to convey even a greater appearance of strength. Above this, if the square form is still retained, it may be with more elegance and less

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[1] There are some admirable remarks on this subject in Mr. E. L. Garbett's 'Rudimentary Treatise on the Principles of Design in Architecture;' a work that contains more information, and more common-sense criticism on the subject, than perhaps any other in our language.

accentuation. The form may then change to an octagon, that to a polygon of sixteen sides, and then be surmounted by a circular form of any sort. These conditions are not absolute, but the reverse arrangement would be manifestly absurd. A tower with a circular base and a square upper story is what almost no art could render tolerable, while the other pleases by its innate fitness without any extraordinary effort of design.

On the other hand, round pillars are more pleasing as supports for a square architrave, not so much from any inherent fitness for the purpose as from the effect of contrast, and flat friezes preferable to curved ones of the late Roman styles from the same cause. The angular mouldings introduced among the circular shafts of a Gothic coupled pillar add immensely to the brilliancy of effect. Where everything is square and rugged, as in a Druidical trilithon, the effect may be sublime, but it cannot be elegant; where everything is rounded, as in the Choragic Monument of Lysicrates, the perfection of elegance may be attained, but never sublimity. Perfection, as usual, lies between these extremes.

VII.—Proportion.

The properties above enumerated may be characterised as the mechanical principles of design. Size, stability, construction, material, and many such, are elements at the command of the engineer or mason as well as the architect, and a building remarkable for these properties only cannot be said to rise above the lowest grade of architectural excellence. They are invaluable adjuncts in the hands of the true artist, but ought never to be the principal elements of design.

After these, the two most important resources at the command of the architect are proportion and ornament; the former enabling him to construct ornamentally, the latter to ornament his construction; both require knowledge and thought, and can only be properly applied by one thoroughly imbued with the true principles of architectural design.

As proportion, to be good, must be modified by every varying exigence of a design, it is of course impossible to lay down any general rules which shall hold good in all cases; but a few of its principles are obvious enough, and can be defined so as to enable us to judge how far they have been successfully carried out in the various buildings enumerated in the following pages.

To take first the simplest form of the proposition, let us suppose a room built, which shall be an exact cube—of say 20 feet each way—such a proportion must be bad and inartistic; and besides, the height is too great for the other dimensions, apparently because it is impossible to get far enough away to embrace the whole wall at one view, or to see even the commencement of the roof without throwing the head back and looking upwards. If the height were exaggerated to 30 or 40 feet, the disproportion would be so striking, that no art

could render it agreeable. As a general rule, a room square in plan is never pleasing. It is always better that one side should be longer than the other, so as to give a little variety to the design. Once and a half the width has often been recommended, and with every increase of length an increase of height is not only allowable, but indispensable. Some such rule as the following seems to meet most cases:—"The height of a room ought to be equal to half its width, plus the square root of its length." Thus a room 20 feet square ought to be between 14 and 15 feet high; if its length be increased to 40 feet, its height must be at least $16\frac{1}{2}$; if 100, certainly not less than 20. If we proceed further, and make the height actually exceed the width, the effect is that of making it look narrow. As a general rule, and especially in all extreme cases, by adding to one dimension, we take away in appearance from the others. Thus, if we make a room 20 feet wide, and 30 or 40 feet in height, we make it narrow; if 40 wide and 20 high, we make a low room. By increasing the length, we diminish the other two dimensions.

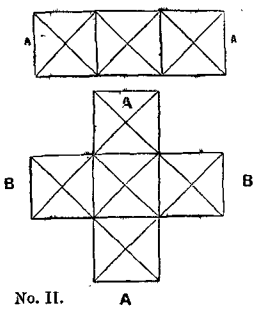
This, however, is merely speaking of plain rooms with plain walls, and an architect may be forced to construct rooms of all sorts of unpleasing dimensions, but it is here that his art comes to his aid, and he must be very little of an artist if he cannot conceal, even when unable entirely to counteract, the defects of his dimensions. A room, for instance, that is a perfect cube of 20 feet may be made to look as low as one only 15 feet high, by using a strongly marked horizontal decoration, by breaking the wall into different heights, by marking strongly the horizontal proportions, and obliterating as far as possible all vertical lines. The reverse process will make a room only 10 feet high look as lofty as one of 15.

Even the same paper (if of strongly marked lines), if pasted on the walls of two rooms exactly similar in dimensions, but with the lines vertical in the one case, in the other horizontal, will alter the apparent dimensions of them by several feet. If a room is too high, it is easy to correct this by carrying a bold cornice to the height required, and stopping there the vertical lines of the wall, and above this coving the roof, or using some device which shall mark a distinction from the walls, and the defect may become a beauty. In like manner, if a room is too long for its other dimensions, this is easily remedied either by breaks in the walls where these can be obtained, or by screens of columns across its width, or by only breaking the height of the roof. Anything which will divide the length into compartments will effect this. The width, if in excess, is easily remedied by dividing it, as the Gothic architects did, into aisles. Thus a room 50 feet wide and 30 high may easily be restored to proportion by cutting off 10 or 12 feet on each side, and lowering the roofs of the side compartments, to say 20 feet. If great stability is not required, this can be done without encumbering the floor with many points of support. The greater the number used the more easily the effect is obtained, but it can be done almost without them.

Externally it is easier to remedy defects of proportion than it is

internally. It is easy to increase the apparent height by strongly marked vertical lines, or to bring it down by the employment of an horizontal decoration. Turning, for instance, to the diagram No. I.: if the two divisions C and D were on opposite sides of a street, and not in immediate juxtaposition, it would be difficult to make any one believe that C was not taller than D, and that the windows in the latter were not farther apart and more squat than those in the first division; and the effect might easily be increased.

If the length of a building is too great, this is easily remedied by projections, or by breaking up the length into divisions. Thus, A A is a long building, but B B is a square one, or practically (owing to the perspective) less than a square in length, in any direction at right angles to the line of vision; or, in other words, to a spectator at A the building would look as if shorter in the direction of B B than in that of A A, owing to the largeness and importance of the part nearest the eye. If 100 feet in length by 50 feet high is a pleasing dimension for a certain design, and it is required that the building should be 500 feet long, it is only necessary to break it into five parts, and throw three back and two forward, or the contrary, and the proportion becomes as before.



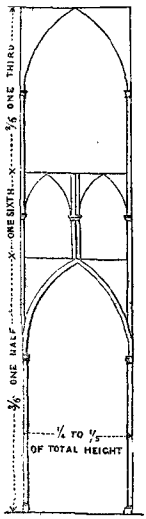
No. II. A

The Egyptians hardly studied the science of proportion at all: they gained their effects by simpler and more obvious means. The Greeks were masters in this as in everything else, but they used the resources of the art with extreme sobriety — externally at least — dreading to disturb that simplicity which is so essential to sublimity in architecture. But internally, where sublimity was not attainable with the dimensions they employed, they divided the cells of their temples into three aisles, and the height into two, by placing two ranges of columns one above the other. By these means they were enabled to use such a number of small parts as to increase the apparent size most considerably, and at the same time to give greater apparent magnitude to the statue, which was the principal object for which the temple was erected.

The Romans do not seem to have troubled themselves with the science of proportion; but during the middle ages we find, from first to last, the most earnest attention paid to it. Half the beauty of the buildings of that age is owing to the successful results to which the architects carried their experiments.

The first great invention of the Gothic architects (though of Greek origin) was that of dividing the breadth of the building into three aisles, and making the central one higher and wider than those on each side. By this means height and length were obtained at the expense of width: this latter, however, is never a valuable property artistically, though it may be indispensable for the utilitarian exigences of the building. They next sought to increase still further the

height of the central aisle by dividing its sides into three equal portions (as in woodcuts No. 490 and 507), which by contrast added very much to the effect; but the monotony of this arrangement was soon apparent: besides, it was perceived that the side aisles were so low as not to come into direct comparison with the central nave. To remedy this they gradually increased its dimensions, and at last hit on something very like the following proportions. They made the height of the side aisle half that of the central (the width being also in the same proportion); the remaining portions they divided into three, making the triforium one-third, the clerestory two-thirds of the whole. Thus the three divisions are in the proportion of 1, 2, and 3, each giving value to the other, and the whole adding very considerably to all the apparent dimensions of the interior. It would have been easy to have carried the system further, and by increasing the number of the pillars longitudinally, and the number of divisions vertically, to have added considerably to even this appearance of size; but it would then have been at the expense of simplicity and grandeur; and though the building might have looked larger, the beauty of the design would have been destroyed.



No. III.

One of the most striking exemplifications of the perfection of the Gothic architects in this department of their art is shown in their employment of towers and spires. As a general rule, placing a tall building in juxtaposition with a low one exaggerates the height of the one and the lowness of the other; and as it was by no means the object of the architects to sacrifice their churches for their towers, it required all their art to raise noble spires without doing this. In the best designs they effected it by bold buttresses below, and the moment the tower got free of the building, by changing it to an octagon, and cutting it up by pinnacles, and lastly by changing its form into that of a spire, using generally smaller parts than are found in the church. By these devices they prevented the spire from competing in any way with the church. On the contrary, a spire or group of spires gave dignity and height to the whole design, without deducting from any of its dimensions.

The city of Paris contains an instructive exemplification of these doctrines—the façade of the cathedral of Notre Dame (exclusive of the upper story of the tower) and the Arc de l'Etoile being two buildings of exactly the same dimensions; yet any one who is not aware of this fact would certainly estimate the dimensions of the cathedral as at least a third, if not a half, in excess of the other. It may be said that the arch gains in sublimity and grandeur what it loses in apparent dimensions by the simplicity of its parts. The façade, though far from one of the best in France, is by no means deficient in grandeur; and had it been as free from the trammels of utilitarianism as the arch, might easily have been made as simple and

as grand, without losing its apparent size. In the other case, by employing the principles which the Gothic architects elaborated with such pains, the apparent dimensions might have been increased without detracting from its solidity, and the arch rendered one of the sublimest buildings in the world.

St. Peter's at Rome is an example of a total neglect of these principles. Its great nave is divided into only four bays, and the proportions and ornaments of these, borrowed generally from external architecture, are so gigantic that no one can realize the true dimensions of the church but by the study of the plan; and it is not too much to assert, that had that cathedral been built in the Gothic style, during the 13th or 14th century, with the same dimensions, it would appear as if from one-third to one-half larger, and would have been the most sublime as well as the largest temple ever erected.

It would be easy to multiply examples to show to what perfection the science of proportion was carried during the existence of a true style of architecture, and how satisfactory the result is, even upon those who are not aware of the cause; and on the other hand, how miserable are the failures that result either from the ignorance or neglect of its rules. Enough, it is hoped, has been said to show that not only are the apparent proportions of a building very much under the control of an architect independent of its lineal dimensions, but also that he has it in his power so to proportion every part as to give value to all those around it, and to produce that harmony which in architecture, as well as in music or in painting, is the very essence of a true or satisfactory utterance.

VIII.—Ornament.

Architectural ornament is of two kinds, *constructive* and *decorative*. By the former is meant all those contrivances, such as capitals, brackets, vaulting shafts, and the like, which serve to explain or give expression to the construction; by the latter, such as mouldings, frets, foliage, &c., which give grace and life either to the actual constructive forms, or to the constructive decoration.

In mere building or engineering, the construction being all in all, it is left to tell its own tale in its own prosaic nakedness; but in true architecture the construction is always subordinate, and with an excess of strength it need not show itself unless it is expedient to do so; but even in an artistic point of view it always is expedient. The vault, for instance, of a Gothic cathedral might just as easily spring from a bracket or a corbel as from a shaft, and in early experiments this was often tried; but the effect was unsatisfactory, and a vaulting shaft was carried down to the capital of the pillar, and afterwards to the floor: by this means the eye was satisfied, the thin reed-like shafts being sufficient to explain that the vault rested on the solid ground, and an apparent propriety and stability were given to the whole. These shafts not being necessary constructively, the artist could make them of any form or size he thought most proper, and consequently, instead

of one he generally used three small shafts tied together at various intervals, and afterwards merely a group of the most graceful moulding, so that they satisfied not only the exigencies of ornamental construction, but became a real and essential decorative feature of the building.

In like manner it was good architecture to use flying buttresses, even where they were not essential to stability. They explained externally that the building was vaulted, and that its thrusts were abutted and stability secured. The mistake in their employment was where they became so essential to security, that the constructive necessities controlled the artistic propriety of the design, and the architect was forced to employ either a greater number, or buttresses of greater strength than he would have desired had he been able to dispense with them.

The architecture of the Greeks was so simple, that they required few artifices to explain their construction; but in their triglyphs, their mutules, the form of their cornices, and other devices, they took pains to explain, not only that these parts had originally been of wood, but that the temple still retained its wooden roof. Had they ever adopted a vault, they would have employed with it a totally different system of decoration. Having no constructive use whatever, these parts were wholly under the control of the architects, and they consequently became the beautiful things we now so much admire.

With their more complicated style the Romans introduced many new modes of constructive decoration. They were the first to employ vaulting shafts. In all the great halls of their Baths, or of their vaulted Basilicas, they applied a Corinthian pillar to the front of the pier, which really supported the vault. All these have now been removed, but without at all interfering with the stability of the vault; they were mere decorative features to explain the construction, but indispensable for that purpose. They also suggested most of the other decorative inventions of the middle ages, but their architecture never reached beyond the stage of transition, so that it was left for the Gothic architects freely to elaborate this mode of architectural effect, which they carried to an extent never dreamt of before, but to which their buildings owe at least half the beauty they possess.

The same system of course applies to dwelling-houses, and to the meanest objects of architectural art. The string-course that marks externally the floor line of the different stories is as legitimate and indispensable an ornament as a vaulting shaft, and it would also be well that the windows should be grouped so as to indicate the size of the rooms, and at least a plain space left where a partition wall abuts, or better still a pilaster or buttress, or line of some sort, ought to mark externally that feature of internal construction.

The cornice is as indispensable a termination of the wall as the capital is of a pillar; and besides, it not only suggests an appropriate support for the roof, but also eaves to throw the rain off the wall. The same is true with regard to pediments or caps over windows: they suggest a means of protecting an opening from the wet; and porches

over doorways are equally obvious contrivances. Every thing, in short, which is actually constructive, or which suggests what was or may be a constructive expedient, is a legitimate object of decoration, and affords the architect unlimited scope for the display of taste and skill, without going out of his way to seek it.

The difficulty in applying ornaments borrowed from other styles is, that although they all suggest construction, it is not *the* construction of the building to which they are applied. To use Pugin's clever antithesis, "they are constructed ornament, not ornamented construction," and as such can never satisfy the mind. However beautiful in themselves, they are out of place, there is no real or apparent use for their being there; and in an art so essentially founded on utilitarian principles and common sense as architecture is, any offence against constructive propriety is utterly intolerable.

The other class of decorative ornaments are forms invented for the purpose, either mere lithic forms, or copied from the vegetable kingdom, and applied so as to give elegance or brilliancy to the constructive decoration just described.

The first and most obvious of these are mere mouldings, known to architects as Scotias, Cavettos, Ogees, Toruses, Rolls, &c.—curves which, used in various proportions either horizontally or vertically, produce, when artistically combined, the most pleasing effect.

In conjunction with these, it is usual to employ a purely conventional class of ornament, such as frets, scrolls, or those known as the bead and reel, or egg and dart mouldings; or in Gothic architecture the billet or dog-tooth, or all the thousand and one forms that were invented during the middle ages.

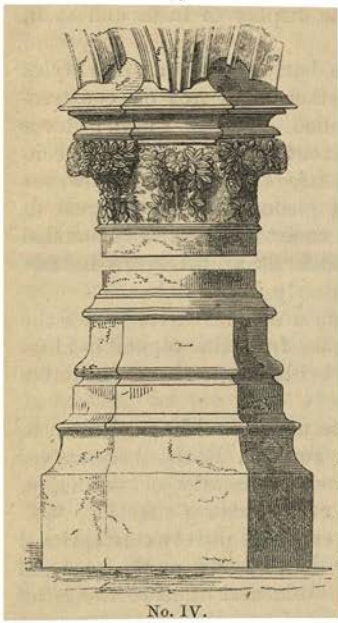
In certain styles of art, vegetable forms are employed even more frequently than those last described. Among these, perhaps the most beautiful and perfect ever invented was that known as the honeysuckle ornament, which the Greeks borrowed from the Assyrians, but made so peculiarly their own. It has all the conventional character of a purely lithic, with all the grace of a vegetable form; and as used with the Ionic order, is more nearly perfect than any other known.

The Romans made a step further towards a more direct imitation of nature in their employment of the acanthus leaf. As applied to a capital, or where the constructive form of the bell beneath it is still distinctly seen, it is unobjectionable; but when the leaf supports the volute at the angles of the abacus, it is on the very verge of good taste.

With their disregard of precedent, and untrammelled wildness of imagination, the Gothic architects tried every form of vegetable ornament, from the purest conventionalism, where the vegetable form can hardly be recognised, to the most literal imitation of nature.

By employing the former an architect can never sin against good taste, though he may miss many beauties; with the latter class of ornament he is always in danger of offence, and few have ever employed it without falling into mistakes. In the first place, because it is impossible to imitate perfectly foliage and flowers in stone; and

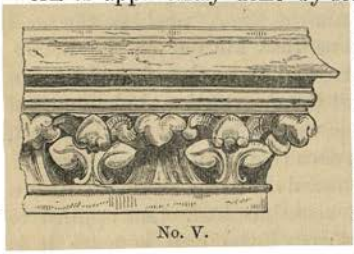
secondly, because if the pliant forms of plants are made to support, or do the work of, hard stone, the incongruity is immediately apparent, and the more perfect the imitation the greater the mistake.



No. IV.

In the instance (woodcut No. IV.), any amount of literal imitation that the sculptor thought proper may be indulged in, because in it the stone construction is so apparent everywhere, that the vegetable form is the merest supplement conceivable; or in a hollow moulding round a doorway, a vine may be sculptured with any degree of imitation that can be employed; for as it has no more work to do than the object represented would have in the same situation, it is a mere adjunct, a statue of a plant placed in a niche, as we might use the statue of a man: but if in the woodcut (No. V.) imitations of real leaves were used to support the upper moulding, the effect would not be so satisfactory; indeed it is questionable if in both these last examples a little more conventionality would not be desirable.

In too many instances, even in the best Gothic architecture, the construction is so overlaid by imitative vegetable forms as to be concealed, and the work is apparently done by leaves or twigs, but in the earliest and purest style this is almost never the case. As a general rule it may be asserted that the best lithic ornaments are those which approach nearest to the grace and pliancy of plants, and that the best vegetable forms are those which most resemble the regularity and symmetry of those which are purely conventional.



No. V.

Although the Greeks in one or two instances employed human figures to support entablatures or beams, the good taste of such an arrangement is more than questionable. They borrowed it, with the Ionic order, from the Assyrians, with whom the employment of caryatides and animal forms was the rule, not the exception, in contradistinction from the Egyptians, who never adopted this practice.[1] Even the Romans avoided this mistake, and the Gothic architects also as a general rule kept quite clear of it. Whenever they did employ ornamented figures for architectural purposes, they were either mon-

[1] The Isis-headed Typhonian capitals cannot be quoted as an exception to this rule: they are affixes, and never appear to be doing the work of the pillar.

sters, as in gargoyles, or griffons; or sometimes in a spirit of caricature they used dwarfs or deformities of various sorts; but their sculpture, properly so called, was always provided with a niche or pedestal, where it might have been placed after the building was complete, or from which it might be removed without interfering with the architecture.

No ornament is so essential or so important to true architecture as sculpture, whether employed as single figures, or as bas-reliefs, or on friezes; but wherever it is introduced, it ought to be in niches or panels, or places where pains have been taken expressly to provide that the construction shall not interfere with them, and never where they seem to have anything to do either directly or indirectly with the construction.

IX.—Colour.

Colour is one of the most invaluable elements placed at the command of the architect to enable him to give grace or finish to his designs. From its nature it is of course only an accessory, or mere ornament; but there is nothing that enables him to express his meaning so cheaply and easily, and at the same time with such brilliancy and effect. For an interior it is absolutely indispensable; and no apartment can be said to be complete till it has received its finishing touches from the hand of the painter. Whether exteriors ought or ought not to be similarly treated admits of more doubt.

Internally the architect has complete command of the situation; he can suit his design to his colours, or his colours to his design. Walls, roof, floor, furniture, are all at his command, and he can shut out any discordant element that would interfere with the desired effect.

Externally this is seldom if ever the case. A façade that looks brilliant and well in noonday sun may be utterly out of harmony with a cold gray sky, or with the warm glow of a setting sun full upon it; and unless all other buildings and objects are toned into harmony with it, the effect can seldom be harmonious.

There can now be no reasonable doubt that the Greeks painted their temples both internally and externally, but as a general rule they always placed them on heights where they could only be seen relieved against the sky; and they could depend on an atmosphere of uniform, unvarying brightness. Had their temples been placed in groves or valleys, they would probably have given up the attempt, and certainly never would have ventured upon it in such a climate as ours.

Except in such countries as Egypt and Greece, it must always be a mistake to apply colour by merely painting the surface of the building externally; but there are other modes of effecting this which are perfectly legitimate. Coloured ornaments may be inlaid in the stone of the wall without interfering with the construction, and so placed be far more effective and brilliant than the same ornaments would be if carved in relief. Again, string-courses and mouldings of various

coloured stones or marbles might be employed with far better effect than can be obtained by depth of cutting and boldness of projection. Such a mode of decoration can only be partial; if the whole building is to be coloured, it must be done constructively, or the effect will never be satisfactory.

In the middle ages the Italians carried this mode of decoration to a considerable extent; but in almost all instances it is so evidently a veneer overlying the construction that it fails to please; and a decoration which internally, where construction is of less importance, would excite general admiration, is without meaning on the outside of the same wall.

At the same time it is easy to conceive how polychromy might be carried out successfully, if, for instance, a building were erected, the pillars of which were of red granite or porphyry, the cornices or string-courses of dark coloured marbles, and the plain surfaces of lighter kinds, or even of stone. A design so carried out would be infinitely more effective than a similar one executed in materials of only one colour, and depending for relief only on varying shadows of daylight. There is in fact just the same difficulty in lighting monochromatic buildings as there is with sculpture. A coloured painting, on the other hand, requires merely sufficient light, and with that expresses its form and meaning far more clearly and easily than when only one colour is employed. The task, however, is difficult; so much so, indeed, that there is hardly one single instance known of a complete polychromatic design being successfully carried out anywhere, though often attempted. The other mode of merely inlaying the ornaments in colour instead of relieving them by carving as seldom fails.

Notwithstanding this an architect ought never to neglect to select the colour of his materials with reference to the situation in which his building is to stand. A red brick building may look remarkably well if nestling among green trees, while the same building would be hideous if situated on a sandy plain and relieved only by the warm glow of a setting sun. A building of white stone or white brick is as inappropriate among the trees, and may look bright and cheerful in the other situation.

In towns colours might be used of very great brilliancy, and if done constructively, there could be no greater improvement to our architecture; but to do so is so difficult that it may be questioned whether it will be ever successfully accomplished.

With regard to interiors there can be no doubt. All architects in all countries of the world resorted to this expedient to harmonise and to give brilliancy to their compositions, and depended on it for their most important effects.

The Gothic architects carried this a step further by the introduction of painted glass, which was a mode of colouring more brilliant than had been ever before attempted. They went beyond all previous efforts, inasmuch as they coloured not only the objects themselves, but also the light in which they were seen. So enamoured were they of its beauties, that they sacrificed much of the constructive propriety of their build-

ings to admit of its display, and paid more attention to it than to any other part of their designs. Perhaps they carried this predilection a little beyond the limits of good taste; but colour is in itself so exquisite a thing, and so admirable a vehicle for the expression of architectural as well as of æsthetic beauty, that it is difficult to find fault even with the abuse of what is in its essence so legitimate and so beautiful.

X.—Uniformity.

Considerable confusion has been introduced into the reasoning on the subject of architectural uniformity from the assumption that the two great schools of art, the classical and the mediæval, adopted contrary conclusions regarding it, formality being supposed to be the characteristic of the former, irregularity of the latter. The Greeks, of course, when building a temple or monument, which was only one room or one object, made it exactly symmetrical in all its parts, but so did the Gothic architects when building a church or chapel or hall, or any single object: in ninety-nine instances out of a hundred, a line drawn down the centre divides it into two equal and symmetrical halves; and when an exception to this occurs, there is some obvious motive for it.

But where several buildings of different classes were to be grouped, or even two temples placed near one another, the Greeks took the utmost care to prevent their appearing parts of one design or one whole; and when, as in the instance of the Erechtheium,[1] three temples are placed together, no Gothic architect ever took such pains to secure for each its separate individuality as the Grecian architect did. What has given rise to the error is, that all the smaller objects of Grecian art have perished, leaving us only the great monuments without their adjuncts.

If we can conceive the task assigned to a Grecian architect of erecting a building like one of our collegiate institutions, he would without doubt have distinguished the chapel from the refectory, and that from the library, and he would have made them of a totally different design from the principal's lodge, or the chambers of the fellows and students; but it is more than probable that, while carefully distinguishing every part from the other, he would have arranged them with some regard to symmetry, placing the chapel in the centre, the library and refectory as pendants to one another, though dissimilar, and the residences so as to connect and fill up the whole design. The truth seems to be that no great amount of dignity can be obtained without a certain degree of regularity; and there can be little doubt that artistically it is better that mere utilitarian convenience should give way to the exigences of architectural design than that the latter should be constrained to yield to the mere prosaic requirements of the building. The chance medley manner in which many such buildings were grouped together in the middle ages tells the story as clearly, and may be productive of great picturesqueness of effect, but not of the same nobility as might be

[1] See woodcuts 223, 234, and 235.

obtained by more regularity, and the highest class of design will never be reached by these means.

It is not difficult to discover, at least to a certain extent, the cause of this, as no number of separate units will suffice to make one whole. A number of pebbles will not make a great stone, nor a number of rose-bushes an oak; nor will any number of dwarfs make up a giant. To obtain a great whole there must be unity, to which all the parts must contribute, or they will remain separate particles. The effect of unity is materially heightened when to it is added uniformity: the mind then instantly and easily grasps the whole, and knows it to be one, perceiving the ruling idea that governed and moulded the whole together. It seems only to be by the introduction of uniformity that sufficient simplicity for greatness can be obtained, and the evidence of design made so manifest that the mind is satisfied that the building is no mere accumulation of separate objects, but the production of a master mind.

In a palace irregularity seems unpardonable. The architect has there practically unlimited command of funds and of his arrangements, and he can easily design his suites of rooms so as to produce any amount of uniformity he may require: the different heights of the different stories and the amount of ornament on them, with the employment of wings for offices, is sufficient to mark the various purposes of the various parts; but where the system is carried so far in great public buildings, that great halls, libraries, committee-rooms, and subordinate residences are all squeezed into one perfectly uniform design, the building loses all meaning, and fails from the opposite error.

The rule seems to be that every building or every part of one ought most distinctly and clearly to express not only its constructive exigences, but also the uses for which it is destined; on the other hand, that mere use ought, in all instances where architectural effect is aimed at, to give way to artistic requirements; and an architect is consequently justified, in so far as his means will admit, in producing that amount of uniformity and regularity which seems indispensable for anything like grandeur of effect. In villas and small buildings all we look for is picturesqueness and meaning combined with elegance; but in larger and more monumental erections we expect something more; and this can hardly be obtained without the introduction of some new element which shall tell, in the first place, that artistic excellence was the ruling idea of the design, and in the next place give it that perfect balance and symmetry which seems to be as inherent a quality of the works of nature as of true art.

XI.—Imitation of Nature.

The subject of the imitation of Nature is one intimately connected with those mooted in the preceding paragraphs, and regarding which considerable misunderstanding seems to prevail. It is generally assumed that in architecture we ought to copy natural objects as we see

them, whereas the truth seems to be that we ought always to copy the processes, never the forms of Nature. The error apparently has arisen from confounding together the imitative arts of painting and sculpture with the constructive art of architecture. The former have no other mode of expression than by copying, more or less literally, the forms of Nature; the latter, as explained above, depends wholly on a different class of elements for its effect; but at the same time no architect can either study too intently, or copy too closely, the methods and processes by which Nature accomplishes her ends; and the most perfect building will be that in which these have been most closely and literally followed.

To take one prominent instance:—So far as we can judge, the human body is the most perfect of Nature's works; in it the groundwork or skeleton is never seen, and though it can hardly be said to be anywhere concealed, it is only displayed at the joints or more prominent points of support, where the action of the frame would be otherwise unintelligible. The muscles are disposed not only where they are most useful, but so as to form groups gracefully rounded in outline. The softness and elegance of these are further aided by the deposition of adipose matter, and the whole is covered with a skin which by its beautiful texture conceals the more utilitarian construction of the internal parts. In the trunk of the body the viscera are disposed wholly without symmetry or reference to beauty of any sort—the heart on one side, the liver on the other, and the other parts exactly in those positions and in those forms by which they may most directly and easily perform the essential functions for which they were designed. But the whole is concealed in a perfectly symmetrical sheath of the most exquisitely beautiful outline. It may be safely asserted that a building is beautiful and perfect exactly in the ratio in which the same amount of concealment and the same amount of display of construction is preserved, where the same symmetry is shown as between the right and left sides of the human body—the same difference as between the legs and arms, where the parts are applied to different purposes, to adorn without interfering with what is useful, and where the same amount of ornament is added. In short there is no principle involved in the structure of man which may not be taken as the most absolute standard of excellence in architecture. The same is true of all other objects of Nature. If we could find Nature making trees like stones, or animals like trees, or birds like fishes, or fishes like mammalia, or using any parts taken from one kingdom for purposes belonging to another, it would then be perfectly legitimate for us to use man's stature as the modulus for a Doric, or woman's as that of an Ionic column—to build cathedrals like groves, and make windows like leaves, or to estimate their beauty by their resemblance to such objects; but all such comparisons proceed on an entire mistake of what imitation of Nature really means.

It is the merest and most absolute negation of reason to apply to one purpose things that were designed for another, or to imitate them when they have no appropriateness; but it is our highest privilege to

understand the processes of Nature. To apply these to our own wants and purposes is the highest stretch of human intellect and the perfection of human wisdom.

So instinctively, but so literally, has this correct process of imitating Nature been followed in all true styles of architecture, that we can always reason regarding them as we do with regard to natural objects. Thus, if an architect finds in any quarter of the globe a Doric or Corinthian capital with a few traces of a foundation, he at once can tell the age of the temple or building to which it belonged. He knows who the people were who erected it, to what purpose it was dedicated, and proceeds at once to restore its porticos, and without much uncertainty can reproduce the whole fabric. Or if he finds a few Gothic bases in situ, with a few mouldings or frusta of columns, by the same process he traces the age, the size, the purposes of the building before him. A Cuvier or an Owen can restore the form and predicate the habits of an extinct animal from a few fragments of bone, or even from a print of a foot. In the same manner an architect may, from a few fragments of a building, if of a true style of architecture, restore the whole of its pristine forms, and with almost the same amount of certainty. This arises wholly because the architects of those days had correct ideas of the true meaning of the expression and imitation of Nature. They added nothing to their buildings which was not essential; there was no detail which had not its use, and no ornament which was not an elaboration or heightening of some essential part, and hence it is that a true building is as like to a work of Nature as any production of man's hands can be to the creations of his Maker.

XII.—Ethnography.

It is the circumstance mentioned in the last section of the perfectly truthful imitation of Nature in all true styles of art that gives such a charm to the study, and raises the elaboration of these principles to the dignity of a science. It leads also to one further conclusion: when men expressed their knowledge so truthfully, they expressed also their feelings, and with their feelings their nationality. It is thus that, looking on an ancient building, we can not only tell in what state of civilization its builders lived, or how far they were advanced in the arts, but we can almost certainly say also to what race they belonged, and what their affinities were with the other races or tribes of mankind. So far as my knowledge extends, I do not know a single exception to this rule; and, as far as I can judge, I believe that architecture is in all instances as correct a test of race as language, and one far more easily applied and understood. Languages alter and become mixed, and when a change has once been established it is extremely difficult to follow it back to its origin, and unravel the elements which compose it; but a building once erected stands unchanged to testify to the time when it was built, and the feelings and motives of its builders remain stamped indelibly upon it as long as it lasts.

Owing to the confusion of styles which has prevailed since the

Renaissance, this branch of the subject has been little understood or followed out; but it is the characteristic which lends to the study of ancient architecture its highest value, and which, when properly understood, will elevate what has been considered as a merely instructive pastime into the dignity of an important science.

XIII.—New Style.

There is still one other point of view from which it is necessary to look at this question of architectural design before any just conclusion can be arrived at regarding it. It is in fact necessary to answer two questions, nearly as often asked as those proposed at the beginning of this Introduction. "Can we ever again have a new and original style of architecture?"—"Can any one invent a new style?" Reasoning from experience alone, it is easy to answer these questions. No individual has, so far as we know, ever invented a new style in any part of the world. No one can even be named who during the prevalence of a true style of art materially advanced its progress, or by his individual exertion did much to help it forward; and we may safely answer, that as this has never happened before, it is hardly probable that it will ever occur now.

If this one question must be answered in the negative, the other may as certainly be answered in the affirmative, inasmuch as no nation in any age or in any part of the globe has failed to invent for itself a true and appropriate style of architecture whenever it chose to set about it in the right way, and there certainly can be no great difficulty in our doing now what has been so often done before, if we only set to work in a proper spirit, and are prepared to follow the same process which others have followed to obtain this result.

What that process is, may perhaps be best explained by an example; and as one of a building character, though totally distinct, let us take ship-building.

Let us take a series of ships, beginning with those in which William the Conqueror invaded our shores, or the fleet with which Edward III. crossed over to France. Next take the vessels which transported Henry VIII. to his meeting with Francis I., and then pass on to the time of the Spanish Armada, and the sea fights of Van Tromp and De Ruyter, and on to the times of William III., and then through the familiar examples till we come to such ships as the Wellington and Marlborough, now afloat. In all this long list of examples we have a gradual, steady, forward progress, without one check or break. Each century is in advance of the one before it, and the result is as near perfection as we can well conceive.

But if we ask who effected these improvements, or who invented any part of the last-named wonderful fabrics, we must search deep indeed into the annals of the navy to find out. But no one has inquired, and no one cares to know, for the simple reason that, like architecture in the middle ages, it is a true and living art, and the improvements were not effected by individuals, but by all classes,

owners, sailors, shipwrights, and men of science, all working together through centuries, each lending the aid of his experience or his reasoning.

If we place alongside of this series of ships a list of churches or cathedrals, commencing with Charlemagne and ending with Charles V., we find the same steady and assured progress obtained by the same identical means. In this instance, princes, priests, masons, and mathematicians, all worked steadily together for the whole period, striving to obtain a well-defined result.

In the ship the most suitable materials only are employed in every part, and neither below nor aloft is there one single timber nor spar nor one rope which is superfluous. Nor in the cathedral was ever any material used that was not believed to be the most suitable for its purpose; nor one form of construction which did not seem the best to those who employed it; nor any detail added which did not seem necessary for the purpose it was put there to express; and the consequence is, that we can look on and contemplate both with the same unmitigated satisfaction.

The one point where this comparison seems to halt is, that shipbuilding never became a purely fine art, which architecture really is. The difference is only one of aim, which it would be as easy to apply to the one art as it has been to the other. Had architecture never progressed beyond its one strictly legitimate object of house building, it never would have been more near a fine art than merchant shipbuilding, and palaces would only have been magnified dwelling-places. Castles and men-of-war advanced both one stage further towards a fine art. Size and power were impressed on both, and at this stage they stand precisely equal to one another. Here ship-building halted, and has not progressed beyond, while architecture was invested with a higher aim. In all ages men have sought to erect houses more dignified and stately than those meant for themselves. They attempted the erection of dwelling-places for their gods, or temples worthy of the worship of Supreme Beings; and it was only when this strictly useful art threw aside all shadow of utilitarianism, and launched boldly forth in search of the beautiful and the sublime, that it became a truly fine art, and took the elevated position which it now holds above all other useful arts. It would have been easy to supply the same motive to shipbuilding. If we could imagine any nation ever to construct ships of God, or to worship on the bosom of the ocean, ships might easily be made such objects of beauty that the cathedral could hardly compete with them.

It is not, however, only in architecture or in ship-building that this process is essential, but the progress of every art and every science that is worthy of the name is owing to the same simple process of the aggregation of experiences; whether we look to metallurgy or mechanics, cotton-spinning or coining, their perfection is owing to the same cause. So also the sciences—astronomy, chemistry, geology—are all cultivated by the same means. When the art or science is new, great men stand forth and make great strides; but when once it

reaches maturity, and becomes the property of the nation, the individual is lost in the mass, and a thousand inferior brains follow out steadily and surely the path which the one great intellect pointed out, but which no single mind, however great, could carry to its legitimate conclusion.

So far as any reason or experience yet known can be applied to this subject, it seems clear that no art or science ever has been or can be now advanced by going backwards, and copying earlier forms, or those applicable to other times or other circumstances; and that progress towards perfection is only to be obtained by the united efforts of many steadily pursuing a well-defined object. Wherever this is done, success seems to be inevitable, or at all events every age is perfectly satisfied with its own productions. Where forward progress is the law, it is certain that the next age will surpass the present; but the living cannot conceive anything more perfect, or they would apply it. Everything in any true art is thoroughly up to the highest standard of its period, and instead of the dissatisfied uncertainty in which we are wandering in all matters concerning architecture, we should be exulting in our own productions, and proud in leaving to our posterity the progress we have made, feeling assured that we have paved the way for them to advance to a still higher standard of perfection.

As soon as the public are aware of the importance of this rule, and of its applicability to architecture, a new style must be the inevitable result; and if our civilization is what we believe it to be, that style will not only be perfectly suited to all our wants and desires, but also more beautiful and more perfect than any that has ever existed before.

XIV.—Prospects.

If we turn from these speculations to ask what prospect there is of the public appreciating correctly this view of the matter, or setting earnestly about carrying it out, the answer can hardly be deemed satisfactory.

The clergy, not only in England but on the continent of Europe, have arrived at the conclusion that the Gothic style is the one most suited for church-building purposes; and this has now become so established a point that no deviation from Gothic models is tolerated. Any architect who would attempt originality in plan, or introduce even a new detail or moulding, is immediately set down as ignorant of his profession, and the experiment is not repeated. Every year that we continue in this path, and that our knowledge of the style becomes greater, the heavier will our chains become, and anything like originality or progress in this important branch of architecture more absolutely impossible.

The study of the classical languages, to which so much importance is attached in our public schools, and in our own and most foreign universities, tended at one time in another way to withdraw attention from the formation of a true style of architecture by fixing it exclusively on Greek and Roman models. The Renaissance in the 15th century

arose much more from admiration of classic literature than from any feeling for the remains of buildings which had been neglected for centuries, and were far surpassed by those which succeeded them. The same feelings perpetuated by early association are the great cause of the hold that classic art still has on the educated classes in Europe.

In clubs and mixed societies the style usually adopted is the Italian, out of which progress may come if common sense be allowed to prevail over classical precedents, or the contrary if the reactionary element be allowed to obtain the preference.

Below these there is another class of men who have but little sympathy with Greece or Rome, and still less with mediæval monkery or feudalism, but who in their own strong sense seem inclined to take a more reasonable view of the matter, and these men are now erecting at Manchester and in other cities of the North a series of warehouses and other buildings designed wholly with reference to their uses, and ornamented only in their construction, and which consequently are—as far as their utilitarian purposes will allow—as satisfactory as anything of former days. Eastward of Temple Bar there are many buildings arising on the same system, and with a little more experience they promise to be as satisfactory as those in the North.

In civil engineering, the lowest and most prosaic branch of architectural art, our progress has been brilliant and rapid. Of this no better example can be given than the four great bridges erected over the Thames. Those of Westminster, Blackfriars, Waterloo, and London were erected at nearly equal intervals during one century, and the steady progress which they exhibit is greater than that of almost any similar branch of art during any equal period of time.

In this department our progress is so undeniable that we saw old London Bridge removed without regret, though it was a work of the same age and of the same men who built all our greatest and best cathedrals, and in its own line was quite as perfect and as beautiful as they. But it had outlived its age, and we knew we could replace it by a better—so its destruction was inevitable; and if we had made the same progress in the higher that we have in the lower branches of the building art, we should see a Gothic cathedral pulled down with the same indifference, content to know that we could easily replace it by one far nobler and more worthy of our age and intelligence. No architect during the middle ages ever hesitated to pull down any part of a cathedral that was old and going to decay, and to replace it with something in the style of the day, however incongruous that might be; and if we were progressing as they were, we should have as little compunction in following the same course.

In the confusion of ideas and of styles which now prevails, it is satisfactory to be able to contemplate, in the Crystal Palace at Sydenham, at least one great building carried out wholly in the principles of Gothic or of any true style of art. No material is used in it which is not the best for its purpose, no constructive expedient employed which was not absolutely essential, and it depends wholly for its effect on the arrangement of its parts and the display of its construction. So

essentially is its principle the same which, as we have seen, animated Gothic architecture, that we hardly know even now how much of the design belongs to Sir Joseph Paxton, how much to the contractors, or how much to the subordinate officers employed by the Company. Here, as in a cathedral, every man was set to work in that department which it was supposed he was best qualified to superintend. There was room for every art and for every intellect, and clashing and interference were impossible. This, however, is only the second of the series. A third would probably as far surpass it as it is beyond the first; and if the series were carried to a hundred, with more leisure and a higher aim, we might perhaps learn to despise many things we now so servilely copy, and might create a style surpassing anything that ever went before. We have certainly more wealth, more constructive skill, and more knowledge than our forefathers; and living in the same climate, and being of the same race, there seems no insuperable difficulty in our doing at least as much if not more than they accomplished.

Art, however, will not be regenerated by buildings so ephemeral as Crystal Palaces, or so prosaic as Manchester warehouses, nor by anything so essentially utilitarian as the works of our engineers. The one hope is that, having commenced at the bottom, the true system may extend upwards, and come at last to be applied to our palaces and churches, and the whole nation lend its aid to work out the great problem. Whenever its significance is rightly appreciated by the public, this result seems inevitable; and with the means of diffusing knowledge which we now possess, we may perhaps be permitted to fancy that the dawn is at hand, and that after our long wanderings in the dark, daylight may again enlighten our path and gladden our hearts with the vision of brighter and better things in art than a false system has hitherto enabled us to attain.

PART I.

HANDBOOK OF ARCHITECTURE.

BOOK I.

INDIA.

CHAPTER I.

INTRODUCTORY.

The countries commonly described under the general name of India form in themselves a group completely detached from the other kingdoms of the ancient world, and differ entirely from them in all their most striking peculiarities. We may therefore consider them separately from the rest, and as a subject complete in itself. India was undoubtedly one of the earliest civilised countries on the face of the globe. This fact is proved by her sacred writings which still remain to us, the Vedas, which were arranged in their present form at a very early period of the world's history. We also possess the laws of Menu, which are believed to have been compiled at about the same time as those of Lycurgus. These, together with such fragments of her history as can be extracted from the strangely falsified chronology of the Indian historians, testify that the plains of this great country were at a very early period covered with regular communities of civilised men. These actual records are strongly confirmed by the very fables and traditions of the West, which all point to India as the land of wealth and learning—the El Dorado of the ancient world. It was to India that the mythic heroes of ancient Greece, Hercules and Bacchus, bent their steps; and, from the time of the scarcely less fabulous Semiramis to that of Cyrus, it was the desire to reach her long-coveted treasures that called forth the mightiest efforts of the great central monarchies of Asia. Darius and Alexander followed the same path of ambition with better success, but even they could never penetrate beyond her boundaries, never saw her sacred streams, nor the fertile plains they watered.

Persia and Parthia formed a barrier which prevented Rome from ever attempting to seize by conquest the wealth which, reaching her by the more peaceful channels of commerce, formed the staple of that till then unheard-of accumulation of luxury and riches which dazzled

the ancient world, and still excites the incredulity of the present age. It was the memory of that Indian contribution to Rome's magnificence that formed the dream of the dark ages, and sent Columbus to seek her fabled treasures in the distant west, and enabled Vasco da Gama to brave the terrors of the stormy Cape.

But while the contemporary nations have left behind them architectural monuments, there are no such traces remaining of the ancient greatness of India. What we have are entirely the work of a later age than that of which we are now speaking. The existing remains of these later times are on the whole very complete, and in good preservation. Notwithstanding this, the investigation of them is attended with much difficulty, arising from the indifference with which the whole subject is regarded, almost universally, by the Anglo-Saxon sojourners in the country. In all the older British settlements all architectural remains have nearly disappeared; and very little has been done to elucidate those which remain.

In any attempt to understand either the history or the arts of India, the first and most important point to bear in mind is, that the mass of the population consists, and always has consisted, in historical times at least, of two races of men differing from one another as widely as any two races on the face of the globe. The first, or Tamul race, still inhabits the whole of the southern part of the peninsula, and exists as a substratum to the intruding races up to the foot of the Himalaya. This race, so far as we know, is aboriginal. So imperfect is their literature, that we know nothing of their earlier history; and so little has it been studied, that we have not even now traced their affinities among the other races of mankind; while, either because they were not builders, or because the climate or the unsettled state of society has been unfavourable to the preservation of the monuments, we have now nothing from which we can judge how early they were settled, or to what extent they were civilised.

The other race came into India from the West at a very remote epoch. Its first settlement was at Taneswar on the watershed between the Indus and the Ganges. In process of time they extended their settlements eastward. Hastinapoora became their next capital, to be supplanted by Delhi; then Ayodia (Oude), which in like manner was superseded by Canouge. Then Rajagriha on the hills near Gya became a capital city, till about three centuries before Christ they ventured down to Palibothra, the modern Patna, on the banks of the Ganges. Next came Gaur and Dacca; Nuddya; and lastly Calcutta, in which the wealth and power of that great valley is now centered.

Modern researches have traced this intruding race to its origin; the Persians were of the same stock as they were; so were the races who supplanted the Pelasgi in Greece; so were the Romans; so also were all those races of barbarians now designated as the Indo-Germanic, or Arian tribes, who colonized Europe about or before the Christian era, and to whom we belong. None of the Arian races seem originally to have been builders; at least they certainly were not temple-builders. This was owing to the very spirit of their religion. They would have

thought it impious to rear with human hands a house for the one Great Spirit of the universe, whose manifestations were nothing meaner than the sun and planets, and whose emblem on earth was fire, the purest and most subtle of visible things. Accordingly the Persians built no temples. Even when Darius had learnt from more western nations some notions of architectural magnificence, the buildings which were raised in Persia were palaces rather than temples. The Grecian temples were borrowed from Egypt; the Roman from Greece and Etruria; and our own from Rome. The Teutonic tribes, when first known to the Romans, "thought that to confine the gods within walls, or to represent them in the image of man, was unworthy of the greatness of heavenly beings."[1]

Throughout the Vedas there is no allusion to temples nor to images, nor indeed to any public form of worship. Every man stood forth in the presence of his God, and without intercessors offered up his prayers with the prescribed forms, or gave utterance to those hymns of praise which he thought were acceptable; but always feeling himself to be in the immediate presence of the Deity, and appealing directly to His mercy or supplicating His favour.

Among such a people it would of course be in vain to look for any monuments of importance;[2] and while these Arian races remained unmixed with the other inhabitants of India, and retained their pure Vedantic faith, they left, so far as we now know, not one single monument to tell of their existence.[3]

In the seventh century before the Christian era, a prophet, Sakya Muni, was born in India, the result of whose teaching was the introduction of the Buddhist religion into that country; and consequent on this change was the elaboration of a style of architecture, the most ancient as well as the most interesting of those whose monuments are found scattered over the plains of India.

Although much has lately been done to clear up the obscurity that has hitherto hung over the history of the introduction of Buddhism into India, much still remains to be done before the story of its founder can be said to be placed on a satisfactory basis. It is recorded of him that he was one of the last lineal descendants of that long line of kings called the Solar race, who for more than two thousand years had held supreme sway in the Valley of the Ganges, but who, at the time of the birth of Sakya Muni, had dwindled before the rising influence of the Lunar races, from the imperial glories of the kingdom of Oude, to the position of petty princes of a small and undistinguished state near the foot of the Himalaya. Here it was that Sakya was born in the year 623 B.C., and spent the earlier years of his life in the usual occupations

[1] Tacit. Germ.

[2] Perhaps this absence of old remains can be illustrated by a very analogous case. In Burmah, a country of comparatively modern settlement, no buildings, with the exception of temples, are allowed by law to be constructed of brick or stone. Consequently there are only a few pagodas in that country which can last more than a very limited number of years. See book i. ch. iv.

[3] A curious negative corroboration of this exists in the fact that neither Megasthenes nor any Greek writer ever alludes to any temple or remarkable building as existing in India, which could hardly have been the case had any existed.

and amusements of those of his rank. At the age of 35, he—to use the language of his followers—attained to Buddhahood, and spent the remaining 45 years of his life wandering through the various countries of India, promulgating those doctrines which subsequently obtained such universal acceptance in all the countries of Eastern Asia.

One or two points in the doctrines of Buddhism will be necessary to be borne in mind. The present Buddha—Sakya Muni, or Sinha as he is generally called—is held to be only the fourth of the great Buddhas. His three predecessors, Kakusanda, Konagamma, and Kasyapa, are supposed to have existed in extremely remote ages. Their history, as might be expected, is a mere mass of fables and absurdities.

The Buddhists expect a fifth manifestation of the Deity in the person of Maitri Buddha, who is supposed to be now going through the innumerable transmigrations necessary to the attainment of Buddhahood: these transmigrations being an essential part of the whole system. We shall find, in speaking of Thibet, a curious extension of the belief. There the divine soul is held to pass immediately from one Delai Lama to his successor, so that they are never without a living manifestation of the lower class of Buddhas, which they believe their great Lamas to be.

It is still a disputed point among the learned whether Sakya Muni was the original inventor of this religion, or even its first introducer into India. There are many and strong reasons for supposing that he cannot even aspire to this last distinction, for there are certainly many traces of the existence of at least a similar faith, in that country, before his time; though he no doubt gave it that mode of worship, and fixed upon it those peculiar doctrines, which afterwards distinguished it from the other religions of the land. Traces exist of very similar institutions, long before the time of Buddha, in Ethiopia, and as far west as Cyrene. In Syria we have something very similar to it in the tenets of the sect of the Essenes; and at Babylon it is nearly certain that a religion closely allied to it was long the faith of a large section of the people. Pythagoras, the contemporary of Sakya Muni, introduced doctrines of the same class at Crotona, in Italy; and in Persia the sect of the Magi adopted rites and practices so similar, that it is not easy always to detect the distinction between them.

Immediately after the death of Sakya Muni, the first great convocation or council of his followers and disciples was held at Rajagriha in Behar, and a second about a century afterwards at Vaisala on the Gunduck, opposite Patna; and though, if we may believe the traditions, these assemblies were most numerously attended by thousands of priests from all parts of the country, we have still no proof of the religion having been generally adopted at that time by either the people or their rulers.

We know that Chandragupta, so familiar to us as the Sandracottus of Alexander's historians, still adhered, with all his court, to the old Brahminical faith; so did his son Bimbasaro. His grandson Asoka, however, after reaching the imperial throne by the murder of his hundred brothers, forsook the faith in which he had been brought up,

and adopted that of Buddha. He then, with the zeal of a new convert, used the influence he possessed as the most powerful monarch of India in those ages, to establish it as the state religion of the country. He afterwards extended it to Ceylon on the south, and Afghanistan on the north; though, as hinted above, there is reason for suspecting that something similar to it existed before his time in the last-named country, one of the original seats of the Arian race.

It was in the seventeenth year of the reign of this king that the third convocation was held in the city of Palibothra, the modern Patna, almost exactly 300 years after the death of the founder of this religion, where the doctrines and formulas of the faith seem finally to have been settled. It is of more importance to our present purpose, that with this king (250 B.C.) the architectural history of India commences: not one building nor one sculptured stone having yet been found in the length and breadth of the land which can be proved to date before his accession. From his time, however, the series of monuments, some monolithic, some rock-cut, and others built, is tolerably complete during the ten or twelve centuries in which Buddhism continued to be a prevalent religion in the country of its birth.

After this we lose the thread of our architectural narrative in India Proper, but it is continued in Ceylon, Burmah, Java, Thibet, and China, to the present day; and we propose to follow it through all the mutations it has undergone in these different lands, before considering the other styles that arose and still exist in India. Each of them will occupy a niche to itself in the following order.

After the Buddhist styles, as above enumerated, will come—

1. *The Jaina style*, a corruption of the pure Buddhist by admixture with the Hindu style.

2. *The Southern Hindu*, a style of architecture of the Tamul races of the South.

3. *Northern Hindu*, a cognate style, occurring in the Valley of the Ganges and its tributaries.

4. *The modern Hindu*, or that form which Indian architecture took after being modified by the influence of the Mahometan styles.

5. *The Cashmirian* and other aberrant styles, which cannot be included under any of the preceding heads.

CHAPTER II.

BUDDHIST ARCHITECTURE.

CONTENTS.

Division of subject — Topes, Sanchi — Temples, Karli — Monasteries, Ajunta — Ornamentation of caves.

CHRONOLOGICAL MEMORANDA.

	DATES.
Birth of Gautama Buddha	B.C. 623
Death of Gautama Buddha, and first convocation held	543
Chandragupta, contemporary of Alexander	325
Asoka: third convocation held. Buddhism made the religion of the state. Lâts erected. Earliest monuments and inscriptions in India	250
Dasaratha, his grandson. Earliest caves in Behar	about 200
Cuttack caves, from 200 B.C. to about Christian era.	
Topes at Bilsah . 2nd cent. B.C. to 2nd or 3rd	A.D.
Vicramaditya buildings at Oujein	B.C. 56
Salivahana cave at Karli	A.D. 79
Topes at Manikyala 1st cent. B.C. to 3rd or 4th	A.D.
Topes in Afghanistan . 1st cent. A.D. to 5th or 6th.	
Caves at Ajunta 1st cent. A.D. to 10th or 11th	A.D.
Caves at Ellora . 5th cent. A.D. to 8th or 9th	A.D.
Topes at Sarnath . . . . 6th to 9th cent.	A.D.

The examples which remain of Buddhist architecture have hitherto been imperfectly examined, and are generally little known. It is therefore by no means easy to classify them so as to include all, and at the same time render the divisions clear and intelligible. The following arrangement, it is believed, will represent our present knowledge of the subject with tolerable exactness.

1. Topes.—Under this name are included the most important class of buildings. They consist of detached pillars, towers, and tumuli, all of a sacred or monumental character. The word is a corruption of the Sanscrit *sthupa*, meaning a mound, heap, or cairn.

2. Temples.—Known as *Chaitya* halls, or caves.

3. Monasteries.—*Viharas*, being the residences of the priests.

Topes.

This class includes edifices differing from one another principally in the purposes for which they were erected. The oldest and simplest topes were single pillars (*sthambas*), either carved out of one stone or regularly built; the former being distinguished as *Lâts*. The oldest monuments hitherto discovered in India are a group of these monoliths set up by Asoka in the middle of the third century B.C. They were all alike in form, and all bore the same inscription, being four short edicts containing the creed and principal doctrines of Buddhism, which he

had recently embraced.[1] Of these one is at Delhi, having been re-erected by Feroose Shah in his palace, as a monument of his victory over the Hindus. Three more are standing near the river Gunduck, in Tirhoot; and one, represented in the annexed woodcut (No. 1), has recently been placed on a pedestal in the fort of Allahabad. A fragment of another was discovered near Delhi, and part of a seventh was used as a roller on the Benares road by a Company's engineer officer.

The following description of the Allahabad pillar will of course serve for all. It is one stone, 42 ft. 7 in. in height, of which 7 ft. 7 in.[2] may be considered as the base, which probably was buried in some extent in the ground, or in the masonry that supported it. The shaft, properly so called, was 3 ft. in diameter at the base, diminishing to 2 ft. 2 in. at the summit. The necking immediately below the capital (woodcut No. 2) represents, with considerable purity, the honeysuckle ornament of the Assyrians, which the Greeks borrowed from them with the Ionic order. It is very interesting to meet with it also on the earliest known monument of Buddhist art. The pillar at Allahabad has lost its capital, but we are able to supply the deficiency from two of the Tirhoot examples, which retain their capitals with the lions which seem to have crowned the summits of all. In these we meet with the bead and reel ornament familiar to us from Persian Greek architecture. The capitals are so similar to the lower members of those at Persepolis, and more especially to the bases of the columns there, as to leave no doubt of their common origin.

2. Honeysuckle ornament from capital of Lât.

3. Capital of Lât on the Gunduck. From a drawing by the late Capt. Kittoe.

It is almost certain that these pillars of Asoka stood originally in front of some sacred buildings which have perished. We know that the great tope of Sanchi had one or two such monoliths in front of each of its gateways, and the great caves of Karli (woodcut No. 18) and Kennari show

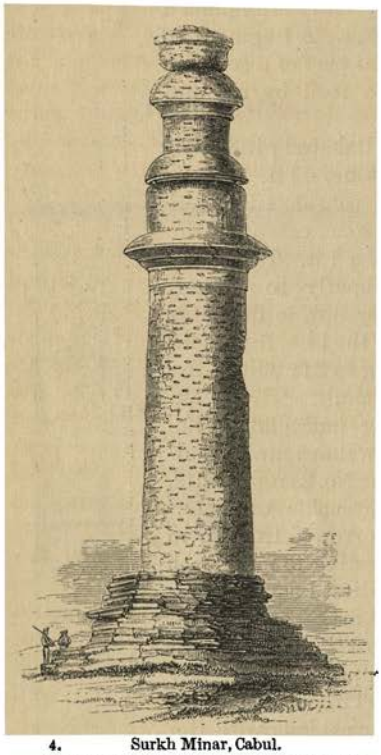
1. Lât at Allahabad.

[1] Translated by Jas. Prinsep, in the sixth volume of the Bengal Journal of the Asiatic Society, p. 566 *et seq.*

[2] These dimensions are taken from Capt. Burt's drawings published in the J. A. S. B., vol. iii. plate 3.

similar pillars cut in the rock in front and on each side of the entrance of the great halls, which, therefore, we may assume to be their proper position.

There is no instance, so far as I am aware, of a built monumental pillar now standing in India. This is sufficiently accounted for by the ease with which they could be thrown down and their materials removed, when they had lost the sanctity by which alone they had been protected. There are, however, two such pillars among the topes of Cabul, and evidently coëval with them, now called the Surkh Minar, and Minar Chakri. These are ascribed by the traditions of the place to Alexander the Great, though they are evidently Buddhist monuments, meant to mark some sacred spot, or to commemorate some event, the memory of which has passed away. They are probably of the third or fourth century of our era, and their shape and outline exhibit great degeneracy from the purer forms with which architecture commenced in India, and which were there retained to a much later period than in this remote province. There can be little doubt but that their upper members are meant to be copies of the tall capitals of the Persepolitan pillars, which were probably common also in Assyria and throughout this part of Asia. They may also have resembled the chapiters which form so important a part of the two pillars which Solomon set up before his temple at Jerusalem.[1]



4. Surkh Minar, Cabul.
From a drawing by Mr. Masson in Wilson's Ariana Antiqua.

The remaining topes are not distinguishable from one another in external shape, though they differed considerably in the purposes for which they were designed, and in the feelings of veneration with which they were regarded. The most important of these purposes was the preservation of relics, the worship of these objects being one of the principal characteristics of Buddhism. In some of the topes which have been opened regular relic-chambers are found, some still furnished with the relics themselves, others plundered of their treasure. These were properly designated as *dagobas* (from *dhatu*, relic, and *gabba* or *garba*, shrine or womb), of which the word pagoda appears to be a

[1] 1 Kings vii. 16, *et seq.*

corruption. Other topes have been found to contain neither relic nor relic-chamber, and these must have been erected to mark some sacred spot or commemorate some event in the history of Buddha or of his religion.

The origin of relic-worship is thus accounted for by the traditions of Buddhism. It is said that at the death of the founder of the religion eight cities disputed the possession of his mortal remains. The difficulty of a decision was avoided by a distribution to each of some portion of the sacred relics. Of these by far the most famous is the Tooth relic, which, till the last few years, was so carefully guarded by the British governors of Ceylon, as the Palladium of our sovereignty over that island. This originally fell to the lot of Kalinga, and was magnificently enshrined on the spot where now stands the celebrated temple of Juggernath at Puri. Here it remained till the fourth century, when it was conveyed for a short time to Patna, then the capital of the country. After performing many miracles there it was restored to its original place of deposit, but only for a very short time;—for, on the invasion of the country by strangers from the East, it was conveyed to Ceylon, concealed in the hair of the king's daughter: it was received there in the year 311 of our era, and has ever since continued the most precious treasure of the realm.[1]

Besides this, Ceylon possesses the left Collar-bone relic, enshrined in the Thuparamya pagoda at Anuradhapoora (woodcut 31), and the Thorax-bone, enshrined at Bintenne, near Kandy. The Mahawanso, or great Buddhist history of Ceylon, describes the mode in which this last building was raised, by successive additions, in a manner so illustrative of the principle on which these relic-shrines arrived at completion, that it is well worth quoting:—"The chief of the Devos, Sumano, supplicated of the deity worthy of offerings for an offering. The Vanquisher, passing his hand over his head, bestowed on him a handful of his pure blue locks from the growing hair of the head. Receiving and depositing it in a superb golden casket, on the spot where the divine teacher had stood, he enshrined the lock in an emerald dagoba, and bowed down in worship.

"The thero Sarabhu, at the demise of the supreme Buddha, receiving at his funeral pile the Thorax-bone relic, brought and deposited it in that identical dagoba. This inspired personage, causing a dagoba to be erected 12 cubits high and enshrining it, thereon departed. The younger brother of King Devenampiatisso (B.C. 250), discovering this marvellous dagoba, constructed another encasing it, 30 cubits in height.

"King Duttagamini (B.C. 161), while residing there, during his subjugation of the Malabars, constructed a dagoba, encasing that one, 80 cubits in height."

"Thus was the Mahiyangana dagoba completed."[2] It is possible

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[1] See account of Tooth relic by the Hon. G. Turnour, J. A. S. B., vol. vi. p. 856 *et seq.* Sterling Cuttack, Trans. A. S. B., vol. xv. p. 263, &c. &c.

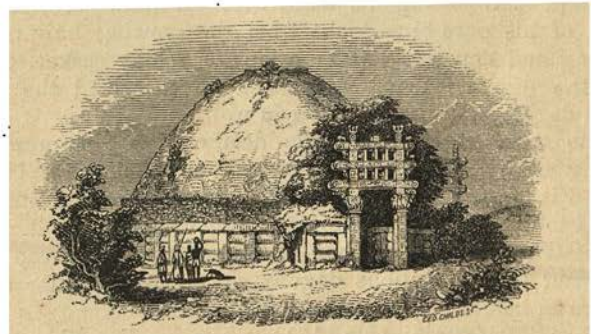
[2] Abstracted from Turnour's Mahawanso, p. 4.

that at each successive addition some new deposit was made; at least most of the topes examined in Afghanistan and the Punjaub show signs of these successive increments, and successive deposits, one above the other.

About 30 topes have been opened near Bilsah by Major Cunningham, of the Bengal Engineers, and Lieut. Maisey, ten of which have yielded relics of the most interesting character. One tope contained relics of the two principal disciples of Buddha; another of Moggaliputra, who presided over the third great convocation held by Asoka. Others contained relics of those missionaries whom we know to have been sent by Asoka to convert the nations of the Himalaya and of the banks of the Indus. Relics were found of other priests and saints whose names and acts are still unknown to us. The whole of these discoveries tend to confirm to a very great extent the traditions that have come down to us, besides making the intent and purpose of these buildings perfectly clear and intelligible.

By far the finest as well as the most perfect tope in India is that of Sanchi, the principal one of those opened near Bilsah, in Central India. It is uncertain whether it ever contained relics or not, as it had been dug into in 1819 by Sir Herbert Maddock, since which time it has remained a ruin, and may have been plundered by the natives. At any rate it must have been a spot of peculiar sanctity, judging both from its own magnificence and from the number of subordinate topes grouped around it. In fact there are a greater number of these monuments on this spot, within a space not exceeding 17 miles, than there are, so far at least as we now know, in the whole of India from the Sutlej to Cape Comorin.

The general appearance of the Sanchi Tope will be understood

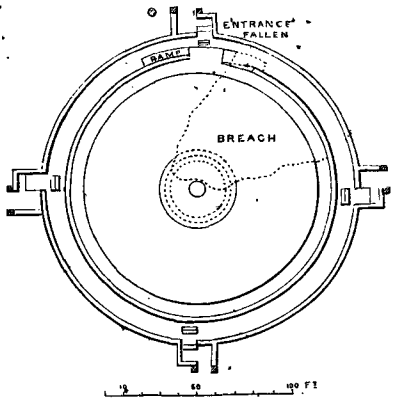


View of Sanchi Tope.

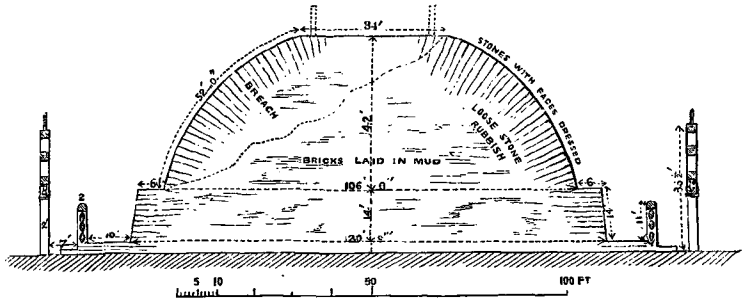
from the view of it (woodcut No. 5), and its shape and arrangement from the plan and section (Nos. 6 and 7). From these it will be observed that the principal building consists of a dome somewhat less than a hemisphere, 106 feet in diameter, and 42 feet in height, with a platform on the top 34 feet across, which originally formed the basis

of the *tee* or capital, which was the invariable finish of these monuments.[1]

The dome rests on a sloping base, 14 feet in height by 120 in diameter, having an offset on its summit about 6 feet wide. This, if we may judge from the representations of topes on the sculptures, must have been surrounded by a balustrade, and was ascended by a broad double ramp on one side. It was probably used for processions encircling the monument, which seem to have been among the most common Buddhist ceremonials. The centre of this great mound is quite solid, being composed of bricks laid in mud; but the exterior is faced with dressed stones. Over these was laid a coating of cement nearly 4 inches in thickness, which was, no doubt, originally adorned either with painting or ornaments in relief.

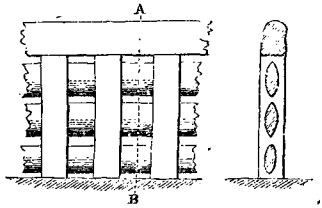


6. Plan of Tope at Sanchi.



7. Section of Tope at Sanchi.

The fence by which this tope is surrounded is extremely curious. It consists of stone posts 8 ft. 8 in. high, and little more than 2 ft. apart. These are surmounted by a plain architrave, 2 ft. 4 in. deep, slightly rounded at the top. So far this enclosure resembles the outer circle at Stonehenge; but between every two uprights three horizontal cross-pieces of stone are inserted, of an elliptical form, of the same depth as the top piece, but only 9 in. thick in the thickest part. This is the only *built* example yet discovered



8. Stone balustrade forming the enclosure at Sanchi.

[1] The drawings, plans, &c., are taken from a Memoir by Capt. J. D. Cunningham, J. A. S. B., August, 1847.

of an architectural ornament which is found *carved* in every cave, and, indeed, in almost every ancient Buddhist building known in India. The upright posts or pillars of this enclosure bear inscriptions indicating that they were all given by different individuals. But neither these nor any other inscriptions found in the whole tope, or in the smaller topes surrounding it (though there are as many as 250 inscriptions in all), contain any known name, or any clue to their age.[1]

Still more curious, however, than even the stone railing are the four gateways. One of these is shown in the general view of the buildings (woodcut No. 5). It consists of two square pillars, covered with sculptures, with bold elephant capitals, rising to a height of 18 ft. 4 in.; above this are three lintels, slightly curved upwards in the centre, and ending in Ionic scrolls; they are supported by continuations of the columns, and three uprights inserted in the spaces between the lintels. They are covered with elaborate sculptures, and surmounted by emblems. The total height is 33 ft. 6 in. One gateway has fallen, and if removed to this country would raise the character of Indian sculpture, as nothing comparable to it has yet been transported from that part of the world to Europe.[2]

No account has been published of the other topes, 30 or 40 in number, composing this group. We only know that none are so large as the one just described: some are not more than 6 ft. in diameter, and in no instance are the enclosures and gateways so complete as those of the great Tope.[3]

Though the inscriptions, as has been said, fail to give us the date of these topes, the characters in which they are written, together with the architecture of the buildings, prove that they must be as old as the Christian era. They could not have been anterior to Asoka's time (B.C. 250), so that we obtain an approximation to their age.[4]

Manikyala.

The only other very important group of topes now known to exist in India is that at Manikyala, the Taxila of Alexander's historians, situated between the Indus and the Jelum, or Hydaspes. The principal structure there is a tope, nearly of the same dimensions in ground-plan as that at Sanchi, but taller, being between 70 and 80 ft. in height, while the latter is only 56 ft. It differs also in appearance, the dome being a perfect hemisphere, and the offset of the base omitted. The base itself is far more ornate, being surrounded by a series of dwarf

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[1] The celebrated Chandragupta inscription on the eastern gateway (J. A. S. B., vol. vi. p. 454) is evidently a subsequent addition, and belongs to the fourth century A.D.

[2] One of these gateways is engraved in great detail, and to a large scale, as a title-page to the author's *Illustrations of Indian Architecture*.

[3] The above particulars have been taken from a paper by the late Capt. J. D. Cunningham (J. A. S. B., Aug. 1847, p. 740 *et seq.*), the illustrations of which, though incomplete, indicate some remains of built temples and monasteries at the same place.

[4] Since this work went to press, Major, now Col., Cunningham's work on these Topes has been published in this country, and, though full of interesting details and illustrations, adds little to the information previously obtained.

pilasters in low relief, probably as a substitute for the independent railing of the Sanchi Tope. These M. Court describes as having capitals with rams' heads (*query*, bulls'?), like those at Persepolis.[1] This is likely enough in itself, but could scarcely have failed to be mentioned by the accurate Elphinstone,[2] had it been correct.

This tope was opened in 1830 by General Ventura; and three separate deposits of relics were found at the depths of about 25, 45, and 65 ft. respectively, each apparently increasing in value with its depth from the top. With these were buried a great number of coins, besides many placed intermediately between the principal deposits. From these it appears that the upper deposit is certainly as modern as the time of the Sassanidæ, being of the fourth or fifth century. But the lower relics may be two centuries earlier, though the evidence on this point is by no means so clear as might be desired, nor were the excavations so carried on as to show whether the tope had reached its present dimensions by successive additions like that at Bintenne (p. 9), or whether it had been erected at once. The former was probably the case, judging from the different depths at which the relics were found.

The most important relic appears to have been a brown liquid contained in a box with an inscription on its lid. When this inscription shall have been deciphered, we shall probably know in honour of what saint this vast mound was erected.

There are at least 15 other topes in this group, one of which was opened by M. Court, who found in a square chamber, 10 ft. above the level of the ground, a gold cylinder enclosed in one of silver, and that again in one of copper. The inner one contained 4 gold coins, 10 precious stones, and 4 pearls. These were no doubt the relics which the tope was intended to preserve. The inscription was illegible, so that we cannot ascertain to whom they belonged. There were silver coins in the tope, and in the cylinders, though not in the innermost one. These are Roman Consular coins[3] of Mark Antony and Augustus Cæsar. The others are Bactrian and native coins, generally supposed to be near the Christian era in date, so that we can have no hesitation in ascribing the tope to the first century. It is so ruined externally that we can form no comparison of the probable age of this and the others. The dates therefore of the greater part of these topes must remain uncertain till they have been systematically examined.

A very large enclosure of a tope is found at Amravati, near the mouth of the river Kistna, in the Madras territory. It now bears the name of Dipal-dinna, or Mount-of-light, but why it is so called has not hitherto been accounted for. The annexed plan (No. 9) will explain the general arrangement of the place. The tank shown in the centre is not an original part of the structure. Its excavation

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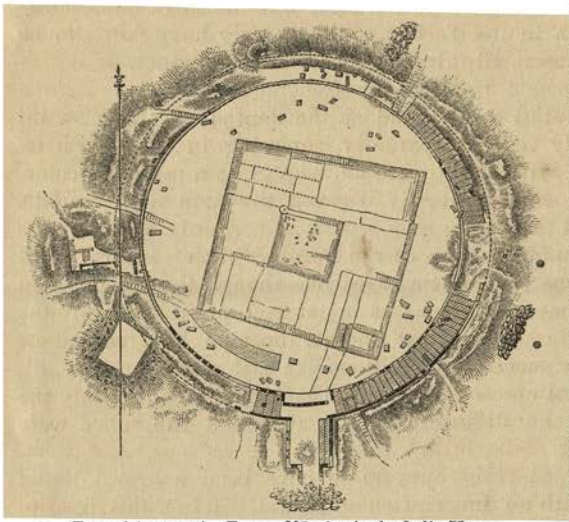
[1] J. A. S. B., vol. iii. p. 557.

[2] Journey to Cabul. The view in his work, though the best we have, is not probably to be depended upon. It was not drawn by the author. J. A. S. B., vol. iii. p. 314 *et seq.*

[3] J. A. S. B., vol. iii. pp. 560 and 635.

was commenced in the last century, and continued in the present, till some troubles in the district caused it to be abandoned and left as it now is, incomplete. As far as the traditions collected by Colonel Mackenzie are intelligible, the monument in the centre was opened by a local Raja in search of treasure, but, failing in finding any, he determined to utilize the space he had cleared by forming in it a reservoir of water. These operations have effectually destroyed all trace of what the central shrine originally consisted of. It can scarcely have been a large and solid mound like that of Sanchi, because, if so, an immense mass of worthless material has been entirely removed, while many stones of far greater value, and easily transported, remain *in situ*. From the great size of the whole enclosure, and from the care and labour displayed in the parts which remain, we may conclude the central shrine to have been some object highly ornamented and of great sanctity.[1]



9. Tope of Amravati. From a MS. plan in the India House. Scale 100 ft. to 1 in.

These remaining parts consist principally of two concentric circles of upright stones, the outer 193 ft. in diameter, and between the two a paved pathway 13 ft. in width. The upright stones are not, like those of the Druidical circles in Europe, mere unshaped masses, but are carved with a minuteness unknown anywhere else, even in India. This may be seen both in the elaborate and beautiful drawings which Colonel Mackenzie caused to be made of them—copies of which exist at Madras, Calcutta, and in the East India House—and also in specimens of the stones themselves, which he sent to all these places. With our imperfect knowledge of Buddhist history, it is impossible to identify many of the scenes and subjects represented, but they certainly form one of the most complete illustrations of Buddhist forms and traditions that can possibly be conceived.

Besides these two circles of stones, the remains of two of its gate-

[1] The particulars from which the account and plan of the Dipal-dinna are compiled are contained in 2 vols. of drawings of the monument, and some MS. notes, in the Mackenzie Collection in the India House, and a paper communicated to Mr. Buckingham by Colonel Mackenzie in March, 1822.

ways (out of four that probably originally existed) have been exhumed, though the drawings do not suffice to explain what their form and elevation were. We may, however, believe them to have been of the same character with those at Sanchi above described, as very similar gateways are more than once represented on the sculptures at this very place.

The mound of earth that surrounds it, backing up the outer circle of stones, seems merely to be the rubbish from the excavation of the tank, and not at all a part of the original design. This is evident from the fact that the carving at the back of the stones, which is of the same character with that at the front, is hidden by it. The removal of this rubbish is much to be desired, and would probably lead to important discoveries. At present we cannot fix the date of the tope with any exactness. All that we can now say is, that it probably was commenced in the third or fourth century of our era, and may have been continued down to the tenth or twelfth.

A great number of tumuli of various sizes surround this great tope, but none, so far as I am aware, have been opened or examined with care. Caves too, with their walls adorned with fresco paintings, occur in the neighbourhood, but they too are unexplored.

Besides these usual accompaniments, this district abounds in what are called *Pandu Kolis*, being circles of unhewn stones, identical in every feature with the Druidical circles of Europe, except that their dimensions are smaller, their diameter being generally about from 10 to 20 ft. As far as has been ascertained, they were nearly always burying-places, which does not appear to have been the case with the circles in Europe.

A few miles north of Benares is a group of topes, known by the name of Sarnath, the principal of which is of a tower-like form, between 50 and 60 ft. in diameter, and 110 ft. in height. The lower part is cased with stone, and adorned with eight niches, surmounted by triangular canopies, and ornamented by bands of scroll-work of great beauty and delicacy. These, however, have only partially been finished; for, like all Indian sculpture, it was added after the masonry was complete. The upper part is in a ruinous state, and appears most probably never to have been finished. It has been opened,[1] but no relic or relic-chamber was found. This spot has been visited by two Chinese travellers, Fa Hian[2] in the year 405, and Hiouen Thsang in the seventh century, who describe all these topes and the purposes for which they were erected.

The great tope now standing at Sarnath seems to have been raised in the end of the 6th or beginning of the 7th century, and to be the identical one described by Hiouen Thsang. It must have replaced or enclosed that seen by Fa Hian. As neither of these travellers mentions

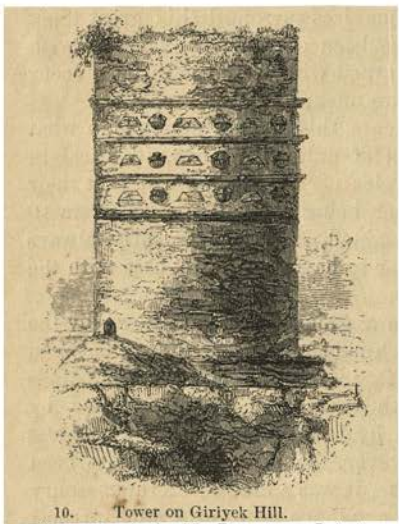
[1] This building was opened by Major Cunningham, under Mr. Prinsep's auspices, in 1830, and careful drawings made of every part of it, which were, I believe, engraved, but never published, nor has any detailed account ever been given of the result of the excavation.

[2] Foe Koue Ki, p. 305. Voyages de Hiouen Thsang, p. 133.

any relics as existing here, we are perhaps justified in assuming that none were ever deposited, but that this and the neighbouring topes were erected to commemorate events in the life of Buddha.

At Keseriah, in Tirhoot, about 20 miles north of Bakra, where one of the pillars of Asoka mentioned above is found, are the ruins of what appears to have been a very large tope. But it is entirely ruined externally, and has never been explored, so that we cannot tell what was its original shape or purpose.[1] All along this line of country numerous Buddhist remains are found, though all more or less ruined, and none of them have been carefully examined. This is the more to be regretted, as this was the native country of the founder of the religion, and the place where apparently his doctrines were originally promulgated. If anything older than the age of Asoka is preserved in India, it is probably in this district that we must look for it.

The annexed woodcut of a tower on the Giriyek hill south of Patna, in Behar, is copied from an engraving which is the only published description of the object it represents. It is ascribed by the natives to Jarasandhu, a king who lived and reigned here five or six centuries before Buddha's time. He is a favourite popular hero, like the Pandus, his contemporaries, to whom half the ancient things in India are ascribed. But there is no doubt that it is a Buddhist monument, and probably of Asoka's time, or a little later, and erected to commemorate some action, or the performance of some miracle.[2]



10. Tower on Giriyek Hill.
From a drawing by Mr. Ravenshaw, J. A. S. of Bengal, vol. viii. p. 353.

The most extensive group of topes known to exist is that of Jelalabad. These are situated beyond the Indus, and therefore not strictly within the limits of India as usually defined. But they stand directly in the track by which the Arian races entered India. That district, at the time when they were erected, and indeed long before, was so closely connected with India as to be almost always confounded with it by the earlier historians.

The oldest tope hitherto discovered in these parts, or probably indeed in India, is one at Jamalgiri, 30 miles north of Peshawur.

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[1] A view of it is given, J. A. S. B., vol. iv. p. 122.

[2] Major Cunningham, in a paper recently read to the Royal Asiatic Society, suggests that those topes which contained no relic were dedicated to the first immortal Buddha as contradistinguished from the last mortal one. I can, however, trace no such distinction in form in the Buddhist writings or traditions, and am not aware on what he founds such an assumption.

It consists of a circular building, probably 20 ft. in diameter,[1] ornamented by 18 figures of Buddha sitting in the usual cross-legged position, each figure separated from the one next it by a pilaster of Corinthian design.

This central building is surrounded by an enclosure probably 50 ft. in diameter—a polygon of 13 sides with an opening in each face—now a mere wall of rude masonry, but once no doubt richly ornamented. Fragments of its sculpture have been recovered, and are so nearly Greek in character, so infinitely superior in design and execution to anything else which has hitherto come home from that country,[2] as to prove incontestably that they must have been executed while the influence of the Græco-Bactrian kingdom was still strong in that quarter: a conclusion which is further confirmed by the relative importance of the enclosure, and the general architectural arrangements of the building.

A great number of the remaining topes were opened by Dr. Honigberger in the years 1833 and 1834; and the results of his numismatic discoveries have been published in Paris and elsewhere. The only account that we have of the buildings themselves is that given by Mr. Masson, who, with singular perseverance and sagacity, completed what Dr. Honigberger left undone.[3]

The topes examined and described by Mr. Masson as existing around Jelalabad are 37 in number, viz. 18 distinguished as the Darunta group, 6 at Chahar Bagh, and 13 at Hidda. Of these about one-half yielded coins and relics of more or less importance, proving the dates of their erection to extend from a few years before the Christian era to the fifth or sixth century.

In general appearance they differ considerably from the great Indian topes just described, being all taller in proportion to their breadth, and having a far more tower-like appearance, than any found in India, except the Sarnath example. They are also smaller, the largest at Darunta being only 160 feet in circumference. This is about the usual size of the first-class topes in Afghanistan, the second class being a little more than 100 feet, while many are much smaller.

In almost every instance they seem to have rested on a square base, though in many this has been removed, and in others is buried in rubbish. Above this rises a circular base or drum, crowned by a belt, sometimes composed merely of two architectural string courses, with different-coloured stones disposed as a diaper pattern between them.

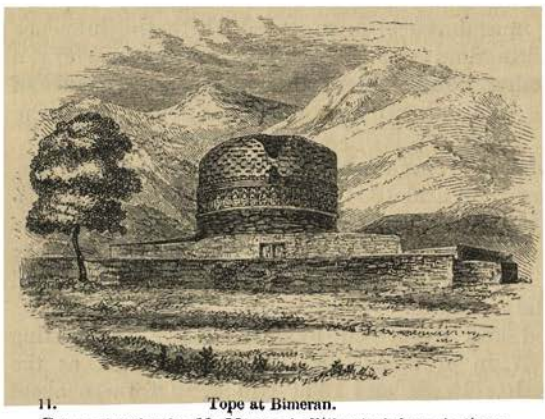
[1] The building was discovered and excavated by Lieuts. Lumsden and Stokes of the Company's service, and some drawings and plans published in the Journal of the Asiatic Society of Bengal, in Nov. 1852, but without scales or dimensions, or any such description as would make the architectural arrangements intelligible.

[2] These sculptures are at present deposited for exhibition in the Crystal Palace at Sydenham, by their proprietor, E. C. Bayley, Esq., B. C. S.

[3] Mr. Masson's account was communicated to Professor Wilson, and by him published in his Ariana Antiqua, with lithographs from Mr. Masson's sketches, which, though not so detailed as we could wish, are still sufficient to render their form and appearance intelligible.

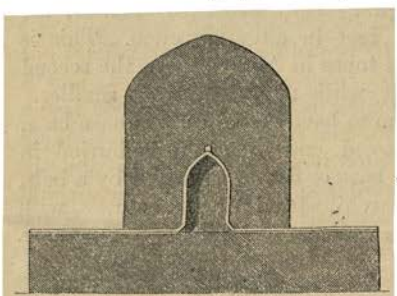
Sometimes a range of plain pilasters occupies this space. More generally the pilasters are joined by arches sometimes circular, sometimes of an ogee form. In one instance—the red tope—they are alternate circular and three-sided arches. That this belt represents the enclosing rail at Sanchi and the pilastered base at Manikyala cannot be doubted. It shows a very considerable change in style to find it elevated so far up the monument as it here is, and so completely changed from its original purpose.

Generally speaking, the dome or roof rises immediately above this, but no example in this group retains its termination in a perfect state. Some appear to have had hemispherical roofs, some conical, of greater or less steepness of pitch; and some, like that represented in woodcut No. 11, it is probable were flat, or with only a slight elevation in the centre. It is very probable that there was some connection between the shape of the roof and the purpose for which the tope was raised. But we have not evidence to lead us to any decision of this point.



11. Tope at Bimeran.
From a drawing by Mr. Masson, in Wilson's Ariana Antiqua.

One interesting peculiarity was brought to light by Mr. Masson in his excavation of the tope at Sultanpore, as shown in the annexed section (woodcut No. 12). It is proved that the monument originally consisted of a small tope on a large square base, the relic being placed on its summit. It was afterwards increased in size by a second tope being built over it.



12. Tope, Sultanpore.
From a drawing by Mr. Masson, in Wilson's Ariana Antiqua.

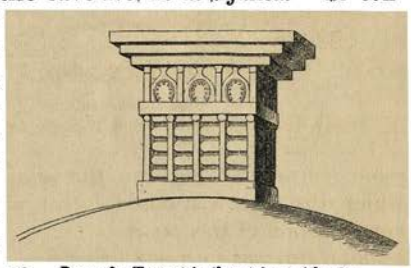
Besides these there are about 20 or 30 topes in the neighbourhood of Cabul, but all very much ruined, and few of any striking importance. So at least we are led to infer from Mr. Masson's very brief notice of them. No doubt many others still remain in spots hitherto unvisited by Europeans.

In the immediate vicinity of all these topes are found caves and tumuli, the former being the residences of priests, the latter for the most part burying-places, perhaps in some instances smaller relic-

shrines. Their exact destination cannot be ascertained without a careful investigation by persons thoroughly conversant with the subject. There are many points of great interest which still require to be cleared up by actual examination. When this has been done we may hope to be able to judge with some certainty of their affinity with the Indian buildings on the one hand, and those of Persia on the other.

None of the topes described above—indeed, no built tope in India—retains a vestige of its *tee* or terminal, which nevertheless must have crowned them all when in their original and perfect state. No representation of a tope—and there are some hundreds among the sculptures of Amravati and Sanchi, and in the painting at Ajunta and elsewhere—is ever without this indispensable accompaniment. All complete rock-cut topes in the caves, as well as the models which are strewn by hundreds about Gya and other Buddhist sites, are so adorned, as are also all modern topes in Burmah, Thibet, and elsewhere. With so many authorities there is no difficulty in restoring this member, though it certainly would be a satisfaction to find one *in situ*.

Its earliest form seems to have been that represented in the annexed woodcut, from the relic-shrine in the cave No. 10 at Ajunta.[1] It consists of a square box, probably originally of wood, and afterwards copied in stone, its lower part being an exact copy of the railing enclosing the tope at Sanchi (p. 11). Above this is an ornamental frieze of window-heads, exactly resembling the arch hereafter to be described in the Karli cave. The whole is covered with three horizontal slabs projecting one beyond the other. In this form there can be very little doubt but that it was, or at all events represented, a châsse, or relic-box; and it is more than probable that originally the relic was not placed in the tope, but on its top. At all events, we find from Fa Hian and others that the relics were frequently exhibited in public, and consequently must have been placed in some accessible shrine; and nowhere could one be placed in a position more consonant with the purpose of the monument or its architectural peculiarities than this one is.



13. Base of a Tee cut in the rock at Ajunta.

If we may venture to adopt this conjecture, it will at once explain several peculiarities, and reconcile several difficulties. In the case of topes in which no relic has been found, as that of Sanchi, we may conclude that there was in many cases originally some sacred object which has disappeared with the terminal which contained it. In the Sultanpore tope (woodcut No. 12), it would be only necessary to suppose a determination to enclose a relic that had previously been accessible, to

[1] See Illustrations of the Rock-cut Temples of India, by the author, p. 17, and plate iii., from which the woodcut is taken.

account for the peculiarities of its structure. Had we drawings of the exterior of the chambers in which relics are found in the inside of the topes, this question would be easily settled, but in the researches which have been made this has been entirely overlooked.

The representations of topes would lead us to believe that this base was in most instances—though not invariably—surmounted by an umbrella, the most common symbol of royalty and state among Eastern nations. All modern pagodas have this; and in one of the oldest caves in India (that at Karli, woodcut No. 18) a wooden umbrella still surmounts the shrine, and is apparently an original part of the design, if not indeed the very umbrella first set up 1800 years ago.

In some instances three of the umbrellas were placed one above the other; and in process of time all these wooden ornaments came to be copied in stone, and to assume a more strictly architectural character, and the tope and its terminal took a more spire-like form, like the one in cave 19, at Ajunta (woodcut No. 14), where the three umbrellas have become a spire, and the tope itself as tall in proportion as any of those in Afghanistan.

14. Rock-cut Tope at Ajunta. From a drawing by the Author.

15. Small model found in the Tope at Sultanpore.

Once enfranchised from the exigencies of wooden construction, the transformation of the terminal went on rapidly until it comes to consist of seven,[1] or even a greater number of discs or umbrellas. This is shown in the model (woodcut No. 15) of a tope in steatite,[2] found in the tope at Sultanpore[3] (woodcut No. 12), belonging most probably to the second or third century of our era. It will be observed that the discs, which constitute the upper part of this model, are of a shape which could not well be copied on a large scale in stone, at least in the open air. But it is evidently the type of numberless other examples found all over India, and more especially of the models found near Gya, except that the latter are so far modified in shape that large copies of them could be worked in stone.

In modern times the terminal has frequently become the whole monument, and in Thibet, and more especially in China, the domical part is wholly omitted, and the monument expands into a seven or nine-storied tower, with scarcely a trace of its origin or original destination. In India, too, the Jains built seven and nine-storied towers, which no doubt had the same source, but without retaining more of the original form than the trans-Himalayan examples.

TUMULI.

The tumuli of India now remaining have no features which would entitle them to be regarded as architectural objects. In fact they are little different from the barrows of Europe and other parts of the world: and this analogy is of itself worthy of remark. But it is by no means certain that the tumuli were all as devoid of decoration from the first; for in Ceylon, Thibet, and other Buddhist countries, the tombs of princes and distinguished individuals are built and ornamented exactly like the topes. It is far from certain also that the same may not be true with regard to those in Afghanistan. It has been before observed that the object of the topes in that country is very imperfectly known.

TEMPLES.

As before hinted, no built examples exist in India of the two remaining classes, the temples (*Chaityas*) and monasteries (*Viharas*), into which we have divided the objects of Buddhist architecture. But the rock-cut examples are so numerous and so perfect, that this is hardly to be regretted, except for one singular and somewhat puzzling peculiarity—that it leaves us wholly without the means of judging what the external appearance of those buildings was. We are thus forced to treat it wholly as an internal architecture. Thus for one-half of the subject we have abundant materials; for the other none at all.[4] It is

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[1] Supposed to be symbolical of the seven Dyani Buddhas.

[2] The steatite was considered a sacred stone by the Buddhists in all ages, and is so now by the Chinese, under the name of Yu stone. All their more sacred vessels are made out of it.

[3] Wilson's Ariana Antiqua, pp. 53 and 89, plate iii.

[4] It is probable that a tolerably correct idea of the general exterior appearance of the buildings from which these caves were copied may be obtained from the *Raths* (as they are called) of Mahavellipore (book i. ch. vii.,

by no means impossible that in the neighbourhood of Sanchi and elsewhere some remains may be found that may assist us out of this difficulty; and when we are more familiar with the sculptures and frescoes than we are at present, many of the buildings there represented may be identified and serve as illustrations, but these illustrations would be most unsafe guides at present, unless used with the utmost caution.

The descriptions hitherto published are not sufficient to enable us to form a complete statistical account of the cave-temples of India, as they are usually called. I have myself visited and described all the most important of them;[1] and in an interesting paper, recently read to the Bombay branch of the Asiatic Society by the Rev. Dr. Wilson, he enumerated 37 different groups of caves, more or less known to Europeans. This number is exclusive of those of Bengal and Madras, and new ones are daily being discovered; we may therefore fairly assume that certainly more than 40, and probably nearly 50, groups of caves exist in India Proper.

Some of these groups contain as many as 100 different and distinct excavations, many not more than 10 or a dozen; but altogether I feel convinced that not less than 1000 distinct specimens are to be found. Of these probably 100 may be of Brahminical or Jaina origin: the remaining 900 are Buddhist, either monasteries or temples, the former being incomparably the more numerous class; for of the latter not more than 20 or 30 are known to exist. This difference arose no doubt from the greater number of the viharas being grouped around built topes, as is always the case in Afghanistan; and, consequently, they did not require any rock-cut place of worship while possessed of the more usual and appropriate edifice.

One important feature is an exception to what has been said of our ignorance of the exterior appearance of Indian temples and monasteries. Of the caves the façades are generally perfect, and executed in the rock with all the detail that could have graced the buildings of which they are copies. In the investigation of these objects a very important advantage is the perfect immutability of a temple once hewn out of the live rock. No repair can add to, or indeed scarcely alter, what is once so executed; and there can be no doubt that we see them now, in all essential peculiarities, exactly as they were originally designed. This advantage will be easily appreciated by any one who has tried to grope for the evidence for a date in design, afforded by our much-altered and often reconstructed cathedrals of the middle ages.

The geographical distribution of the caves is somewhat singular, more than nine-tenths of those now known being found within the limits of the Bombay presidency. The remainder consist of two groups, those of Behar and Cuttack, neither of which are important in extent, in Bengal; one only, that of Mahavellipore, in Madras; and two or

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woodcut 42). These are monuments of a much later date, and belonging to a different religion, but they correspond so nearly in all their parts with the temples and monasteries now under consideration, that we cannot doubt their being, in most respects, close copies of them.

[1] Illustrations of the Rock-cut Temples of India, 1 vol.; text 8vo., with folio plates. Weale, London, 1845.

three not very important groups, which have been traced in Afghanistan and the Punjaub.

I was at one time inclined to connect this remarkable local distribution with the comparative proximity of this side of India to the rock-cutting Egyptians and Ethiopians. But the coincidence can be more simply accounted for by the existence of rocks in both countries perfectly adapted to such works. The whole cave district of India is composed of horizontal strata of amygdaloid and other cognate trap formations, generally speaking of very considerable thickness and great uniformity of texture, and possessing besides the advantage of their edges being generally exposed in perfectly perpendicular cliffs. So that no rock in any part of the world could either be more suited for the purpose or more favourably situated than these formations are. They were easily accessible and easily worked. In the rarest possible instances are there any flaws or faults to disturb the uniformity of the design; and when complete they afford a perfectly dry temple or abode, singularly uniform in temperature, and more durable than any class of temple found in any other part of the world. With these advantages we need hardly look further for an explanation of the phenomenon; though some collateral points of explanation may perhaps reveal themselves to future explorers.

Their distribution as to time also presents a curious anomaly. So far as our knowledge now goes, the oldest are undoubtedly those of Behar and Cuttack in Bengal. The former of these were all excavated in the two centuries preceding the Christian era, and of the latter the greater part are equally ancient, though a few probably extend to a century or two after our era; whereas the oldest on the western side —the earliest, for instance, at Ajunta and Karli—can hardly date anterior to the birth of Christ, if so early, and extend to the tenth or perhaps even the twelfth century of our era. Thus the practice of excavating the rock was almost immediately abandoned in the country where it arose, and was taken up and pursued to an extraordinary extent in a district where it certainly was not original.

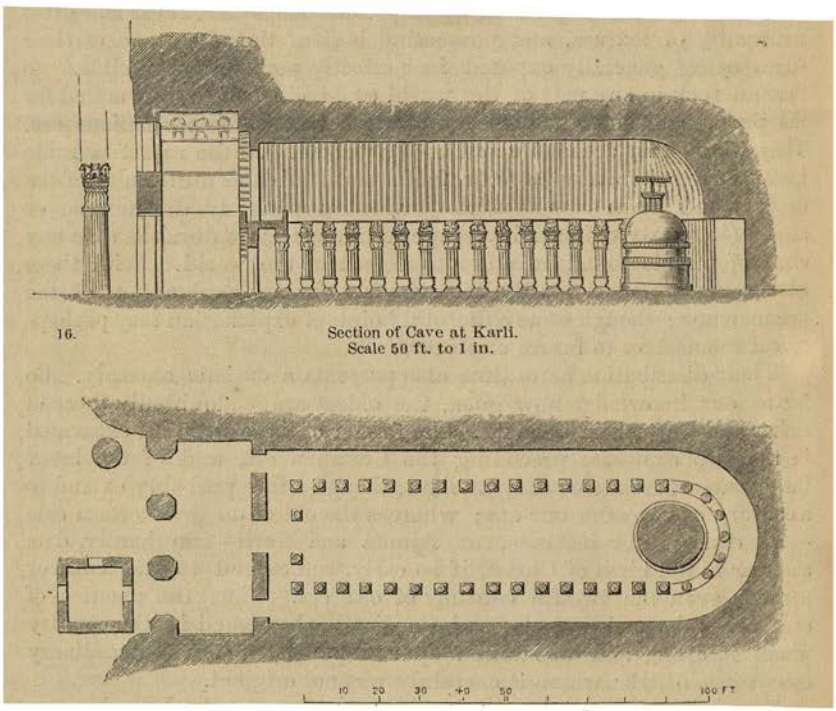
From the time of Dasaratha, the grandson of Asoka, who two hundred years before Christ excavated the first cave at Rajagriha, to Indradyumna, who apparently finished the last of those at Ellora, the series is uninterrupted; and, if properly examined and drawn, the caves would furnish us with a complete religious and artistic history of the greater part of India during fourteen centuries, the darkest and most perplexing of her history. But, although during this long period the practice was common to Buddhists, Hindus, and Jains, it ceased with the Mahometan conquest, or before it. Hardly one excavation has been made or attempted since that period, except perhaps some rude Jaina monoliths in the rock at Gualior, and it may be one or two in southern India.

KARLI.

The well-known cave at Karli, situated on the road between Bombay and Poonah, is the largest as well as the most complete hitherto dis-

covered in India, and was excavated at a time when the style was in its greatest purity.

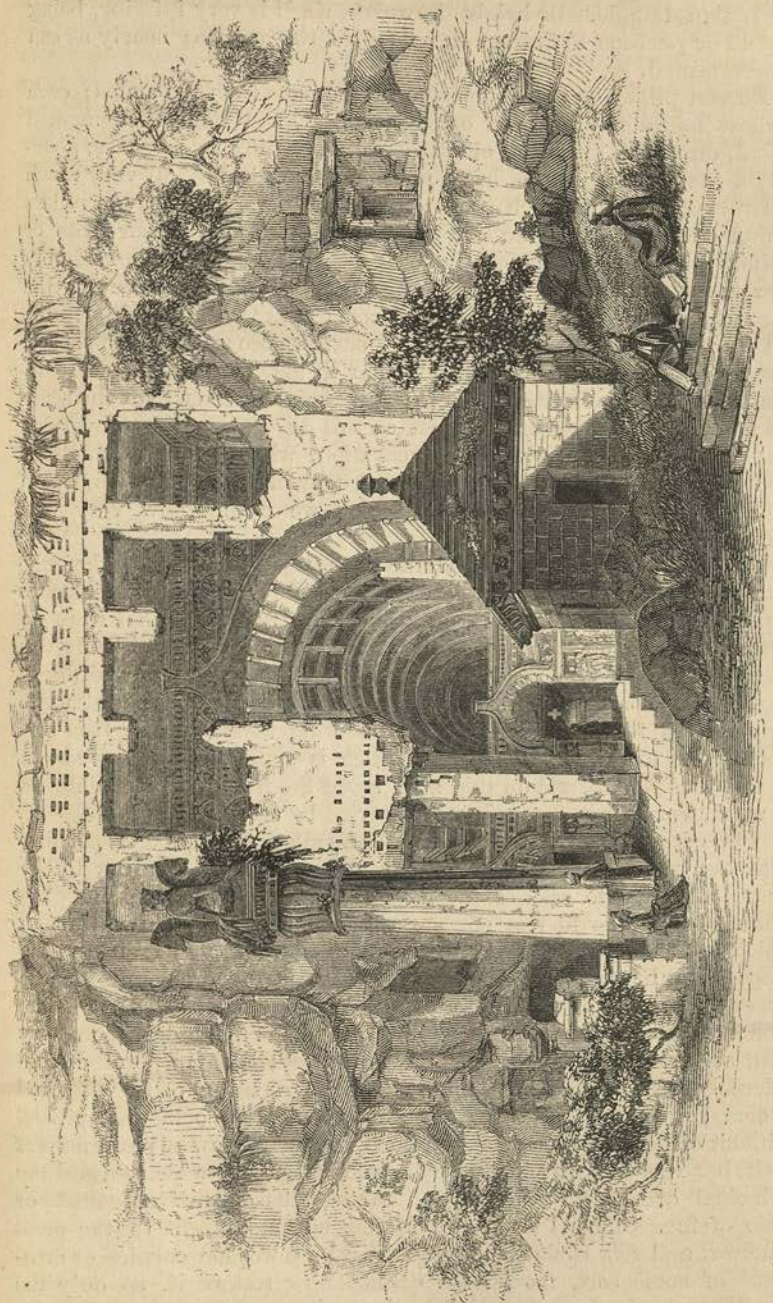
There are no very certain grounds for fixing the date of its excavation, but we shall not err far in attributing it to the century before or after the Christian era—most probably the latter. There are some reasons for ascribing it to the era of Salivahana (A.D. 78), although this, it must be confessed, is at present little more than a mere approximation to the truth.



16. Section of Cave at Karli.
Scale 50 ft. to 1 in.

17. Plan of Cave at Karli, double the usual size.

The building, as will be seen by the annexed illustrations, resembles to a very great extent an early Christian church in its arrangements; consisting of a nave and side aisles, terminating in an apse or semi-dome, round which the aisle is carried. The general dimensions of the interior are 126 ft. from the entrance to the back wall, by 45 ft. 7 in. in width from wall to wall. The side aisles, however, are very much narrower than in Christian churches, the central one being 25 ft. 7 in., so that the others are only 10 ft. wide, including the thickness of the pillars. As a scale for comparison, it may be mentioned that its arrangement and dimensions are very similar to those of the choir of Norwich Cathedral, or of the Abbaye aux Hommes at Caen, omitting the outer aisles in the latter buildings. The thickness of the piers at Norwich and Caen nearly corresponds with the breadth of the aisles in



View of Cave at Karli. From a drawing by Mr. Salt, corrected by the Author.

the Indian temple. In height, however, Karli is very inferior, being only 42 or perhaps 45 ft. from the floor to the apex, as nearly as can be ascertained.

Fifteen pillars on each side separate the nave from the aisles; each of these has a tall base, an octagonal shaft, and richly ornamented capital, on which kneel two elephants, each bearing two figures, generally a man and a woman, but sometimes two females, all very much better executed than such ornaments usually are. The seven pillars behind the altar are plain octagonal piers, without either base or capital, and the four under the entrance gallery differ considerably from those at the sides. These sculptures on the capitals supply the place usually occupied by frieze and cornice in Grecian architecture; and in other examples plain painted surfaces occupy the same space. Above this springs the roof, semicircular in general section, but somewhat stilted at the sides, so as to make its height greater than the semidiameter. It is ornamented even at this day by a series of wooden ribs, probably coeval with the excavation, which prove beyond the shadow of a doubt that the roof is not a copy of a masonry arch, but of some sort of timber construction which we cannot now very well understand.

Immediately under the semidome of the apse, and nearly where the altar stands in Christian churches, is placed the shrine, in this instance a plain dome slightly stilted on a circular drum. As there are no ornaments on it now, and no mortices for wood-work, it probably was originally plastered and painted, or may have been adorned with hangings, which some of the sculptured representations would lead us to suppose was the usual mode of ornamenting these altars. It is surmounted by a terminal the base of which is similar to the one shown on woodcut No. 13, and on this still stand the remains of an umbrella in wood, very much decayed and distorted by age.

Opposite this is the entrance, under a gallery exactly corresponding with our roodloft, consisting of three doorways, one leading to the centre, and one to each of the side aisles, and over the gallery the whole end of the hall is open, forming one great window, through which all the light is admitted. This great window is arched in the shape of a horseshoe, and exactly resembles the ornaments on the upper part of the terminal found at Ajunta (woodcut 13), and the arches which surmount the niches in the hall of the oldest monastery cave at Ajunta, to be described hereafter. The outer porch is considerably wider than the body of the building, being 52 ft. wide, and is closed in front by a screen composed of two stout octagonal pillars, without either base or capital, supporting what is now a plain mass of rock, but was once ornamented by a wooden gallery which formed the principal ornament of the façade. Above this a dwarf colonnade or attic of four columns between pilasters admitted light to the great window, and this again was surmounted by a wooden cornice or ornament of some sort, though we cannot now restore it, as only the mortices remain that attached it to the rock.

Still further in advance of this stands the lion-pillar, in this instance

a plain shaft with 32 flutes, or rather faces, surmounted by a capital not unlike that at Kesariah (woodcut No. 3), but in this instance it supports four lions instead of one. Another similar pillar probably stood on the opposite side, but it has either fallen or been taken down to make way for the little temple that now occupies its place.

The absence of the wooden ornaments, as well as our ignorance of the mode in which this temple was finished laterally, and the porch joined to the main temple, prevents us from judging of the effect of the front in its perfect state. But the proportions of such parts as remain are so good, and the effect of the whole so pleasing, that there can be little hesitation in ascribing to such a design a tolerably high rank among architectural compositions.

Of the interior we can judge perfectly, and it certainly is as solemn and grand as any interior can well be, and the mode of lighting the most perfect—one undivided volume of light coming through a single opening overhead at a very favourable angle, and falling directly on the altar or principal object in the building, leaving the rest in comparative obscurity. The effect is considerably heightened by the closely set and thick columns that divide the three aisles from one another, as they suffice to prevent the boundary walls from ever being seen, and, as there are no openings in the walls, the view between the pillars is practically unlimited.

All these peculiarities are found more or less developed in all the other caves of the same class in India, varying only with the age and the gradual change that took place from the more purely wooden forms of this cave to the lithic or stone architecture of the more modern ones. This is the principal test by which their relative ages can be determined, and at the same time proves incontestably that the Karli cave was excavated very shortly after stone came to be used as a building material in India.

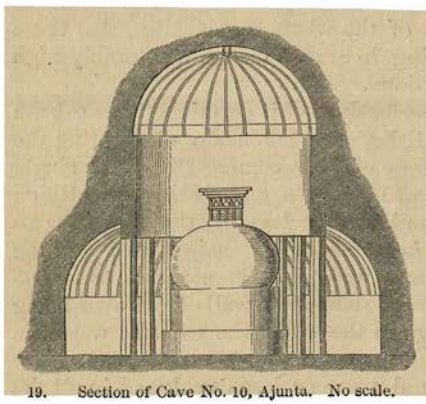
The following list, of which I have placed Karli[1] at the head for the sake of comparison, includes I believe the seven most beautiful, or at least best known, examples of this sort. There are many other cave-temples scattered through the various groups of the western ghâts, but none of them have either been drawn or described in such a manner as to allow of their being classified or even enumerated in such a work as this.

	Length.	Width.	Probable age.
Karli	126·	45·7	1st century after Christ.
Ajunta (No. 10)	94·6	41·3	Ditto. (?)
Do. (No. 9)	45·	23·	2nd or 3rd century.
Do. (No. 19)	46·4	23·7	5th century.
Do. (No. 26)	66·1	36·3	9th or 10th century.
Viswakarma Ellora	85·1	43·	7th or 8th century.
Kannari	88·6	39·10	9th or 10th century.

As will be seen from this list, the next in age and size to Karli is

[1] The other six I have myself visited and measured.

the oldest cave at Ajunta.[1] These two caves are very similar, except that at Ajunta all the pillars are plain octagons, without either capital or base. They are stuccoed, and painted with figures of Buddha and of various saints. Above the pillars is a plain space or belt, corresponding in position to the triforium of a mediæval cathedral, ornamented with painting or with sculpture illustrative of the purposes to which the temple was dedicated. Over this rose the roof, somewhat flatter than the Karli one, but like it adorned with wooden ribs; in this instance, however, these have perished, and left only their marks and fastenings behind. But in the aisles these wooden ribs are represented by stone ones, carved out of the solid rock. This would seem to indicate an advance in style, and consequently more modern date; but the greater simplicity of other parts precludes the idea of any great difference in age. Its section will be understood by the annexed woodcut, which also explains the arrangement of all the caves, and may give us some notion of the exterior form of the buildings which these caves imitate.



19. Section of Cave No. 10, Ajunta. No scale.

The next cave, No. 9, is nearly similar to this, except in size, and has less appearance of age than its neighbour; it is, however, very much ruined, and both of them have lost their façades, from the precipice having fallen away, in the face of which they were excavated.

No. 19, at Ajunta, is one of the most perfect of the class in India, having been excavated before the style had become utterly degenerate, but after all the essential parts of the style had so long and so frequently been repeated in stone, that they had lost all the raw appearance of their wooden originals, and had in consequence become, strictly speaking, architectural features.

No. 26, though very similar to this in many respects, was excavated at too late a period to retain much purity of style, and all its details are coarse and clumsy when compared with the last; while its sculptural arrangements show such a degenerate tendency towards modern Hinduism, as to denote that the style was at its last gasp when this cave was commenced.

The well-known cave, the Viswakarma, at Ellora, occupies an intermediate place between these two. In it the style has become so completely a stone one, that, had we no knowledge of the earlier wooden originals, we might be led to suppose that many of the forms and details arose from the exigencies of construction and vaulting. It is

[1] The tee of its dagoba is drawn, woodcut No. 13; a view of its interior is given in the Illustrations of the Rock-cut Temples of India, plate iii.

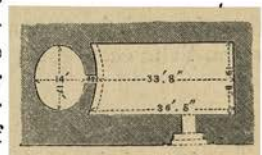
certain from the earlier examples that this was not the case, for we are able in every detail to trace the transition from wood to stone, without missing a single link of the chain of evidence.

The last cave mentioned in the list, that of Kannari, at Salsette, near Bombay, is, I am convinced, for reasons stated at length elsewhere,[1] merely a copy of the Karli cave, executed at a time when Buddhist art had greatly decayed, and mere copying had taken the place of orignal design and thought. It resembles its great prototype in every respect, both externally and internally, except in such a complete degradation of style as to form a puzzle to an antiquary on any other hypothesis than the one suggested above.

Besides these, several of the Behar caves are perhaps entitled to be called cave-temples, though, never having had an opportunity of visiting them myself, and no correct or detailed drawings of them having yet been published, I speak with considerable diffidence regarding them.

The most interesting of them, architecturally at least, is that called the Lomas Rishi, the only one of the group that possesses an architectural façade. It is covered with an inscription which, if authentic and coëval, might induce us to ascribe it to the fourth century; every detail, however, betrays so distinctly its wooden origin, that it must be earlier—perhaps even before the Christian era—and therefore the earliest we are acquainted with. All the peculiarities of the wood are so literally copied in the rock, that if drawn in detail we should have no great difficulty in restoring the original built form from what we find here.

The arrangements of this cave are very peculiar, and differ from those of Western India in many respects. As will be seen from the annexed plan,[2] the doorway with the architectural façade is at the side instead of the end; and the innermost part or shrine, instead of being a copy of the exterior of a tope, is here a domical chamber, capable of receiving a relic or any other sacred thing for which such a sanctuary might be used.



20. Lomas Rishi Cave.

This peculiarity is so interesting, and so illustrative of the original form of these caves, that I have given a plan and section of another, the Sat Gurbha cave (woodcut No. 21), which is very similar to that last described both in size and arrangement, but with the shrine somewhat differently arranged. These caves receive no light except through the narrow entrance at the side, so that the interior is nearly dark, and that of the innermost chambers quite so.

The Sat Gurbha cave is perfectly complete and polished throughout, while the Lomas Rishi is not, as it was apparently never quite

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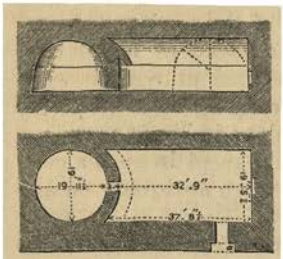
[1] Illustrations of the Rock-cut Temples of India, by the author, to which I must refer for further particulars and illustrations of all these examples.

[2] From one published by Capt. Kittoe, in an interesting paper on the caves in the May number of the J. A. S. B. for 1847, from which the woodcuts are taken.

finished internally; and as both caves are excavated in Syenitic granite of the hardest and most compact character, the labour they must have required will almost bear comparison with that bestowed on their larger and more ornate rivals in the west. Their age, however, renders them still more deserving of attention; for if I am not very much mistaken, they are the oldest of their class in India, and the germ of what we find developed so fully at Ajunta and Ellora. From the inscriptions they appear to belong to the age of Dasaratha, the grandson of Asoka, and consequently to the second century B.C., or thereabouts.



21. Sat Gurbha Cave.

One very curious peculiarity of these, the earliest caves in India, is, that they only, of all the buildings or caves of that country, possess the sloping doorway, narrower at the top than at the bottom. This shape is usually called Egyptian; which, though not found in that country, does exist in Ethiopia, in Etruria, in ancient Greece, and Asia Minor. It is remarkable that these are precisely the countries in which traces of the Pelasgic race are most certainly to be found. We must content ourselves here with pointing out the fact that similar traces are here found in the earliest of all the specimens of Buddhist architecture, and that we find in conjunction with these sloping jambs the honeysuckle ornaments of the Ionic order, which the Greeks certainly imported from Asia, and which as certainly came to India from the west. Much of course remains to be done before these inquiries can lead to any satisfactory conclusion; but we now at least know that the path is open, and that important discoveries must eventually reward the earnest explorers of these hitherto neglected antiquities.

Monasteries.

It is probable that the cave-monasteries differ far more widely than the temples from their built originals. The number of priests in the most flourishing times of Buddhism appears to have been enormous. Its records show that it must have exceeded that of Roman Catholic monks in the middle ages. In fact no religion probably ever indulged in a more excessive priesthood, and none ever more certainly sank beneath the weight of its indolence and corruption. We may conclude from this that the number and size of the monasteries was very great: and we have reason to believe, both from descriptions and tradition, that many of them were buildings of several stories in height. It is true that we have very slight traces of this in the cave-monasteries; for in most instances, even where we find them in two or three stages, one above the other, they are distinct excavations and have no connection one with another. The caves are moreover limited by the necessity of admitting light from the front only; and none of them contain more than a central hall with its surrounding cells. Nor of

course do the caves give any idea of what the exterior of the originals may have been, of which therefore we can only affirm that they must have been important and imposing objects.

The general purposes of both the temples and the monasteries are perfectly well known. Any one who has seen Buddhist priests celebrate either matins or vespers, or some of their more pompous ceremonies, will at once understand the use of every part of the edifices we have been describing. To those who have not witnessed these ceremonies, it will suffice to say that in all the principal forms they resemble those of the Roman Catholics. It is beside the purpose of this work to trace the source of this resemblance, which has attracted the attention of every Roman Catholic priest or missionary who has visited Buddhist countries, from the earliest missions to China to the recent journey into Thibet of Messrs. Huc and Gabet. All they can suggest by way of explanation is, "que le diable y est pour beaucoup."

The same is true with regard to the monasteries. At the time when they were excavated, Buddhist priests were, as now, sworn to celibacy and poverty, and lived apart from their fellow-men in monasteries devoted wholly to religious observances. They shaved their heads, wore a peculiar garb, and obtained, like the mendicant friars, their subsistence principally by alms, which they collected by begging from house to house. Their principal duties were the study of the law and precepts of Buddha, and the continually recurring performance of an unmeaning ceremonial, in which the laity took no part. In some instances these ceremonies were performed within the monasteries themselves, which were all in later times provided with one or more chapels, containing images of Buddha or of subordinate saints, before which their prayers were repeated. But in earlier times, at least, the monasteries were always in the immediate neighbourhood of temples; from which we may gather that either the monasteries were mere residences, and all the services were performed in the temples; or that the great and solemn acts of worship took place in the temples, while the ordinary daily devotions were celebrated within the walls of the monasteries themselves.

It has been already said that the monasteries are far more numerous than the temples. From 700 to 800 examples are known at the present day, and probably there are many more. In age they extend from the simple unadorned cells excavated by Dasaratha, the grandson of Asoka, about 200 B.C., in the granite rocks at Behar, nearly to the time of the Mahometan conquest. The culminating point, however, of this style of art, was shortly after the Christian era; the greatest number, certainly the best, having been excavated during the first five centuries after the birth of Christ.

BENGAL CAVES.

The oldest caves in India are those in Behar, close to the old capital of Rajagriha; but, except the two temples already mentioned (p. 29), they are all mere cells, devoid of architectural ornament either exter-

nally or internally, generally square, and with a sloping jambed doorway. In one instance, however, the Gopi Koobha,[1] the cell is magnified into a hall 46 ft. 5 in. by 19 ft. 2 in., with semicircular ends and a curvilinear roof, the whole being most carefully polished, which, considering the hardness of the granite rock in which it is cut, makes it a work of far more labour than many of those in the West, though they are generally not only larger, but more elaborately ornamented.

The caves in the Udyagiri, near Cuttack, being cut in a far more tractable material, a fine-grained sandstone, show much more fancy and architectural magnificence in design, and consist of all the various classes and grades of such residences, from the simple cell of the solitary ascetic to the rich and populous monastery.

One of the most remarkable of the first class is the so-called Tiger-cave, being in fact a large mass of rock, carved into a form intended to represent the head of that animal, whose extended jaws form the verandah leading into a small apartment excavated in the interior of the skull (see woodcut No. 22).

22. Tiger Cave, Cuttack.

Generally speaking, these single cells have a porch of two pillars to protect the doorway, which leads into a small room 10 or 12 ft. square, constituting the whole cave. Buildings on precisely the same plan are still very common in India, except that now, instead of being the abode of a hermit, the cell is occupied by an image of some god or other, and is surmounted by a low dome, or pyramidal spire, converting it into a temple of some pretensions. The lower part, however, of these small temples is very similar to the rock-cut hermitages of which we are speaking.

The next extension of the cave system was to form an oblong cell with a verandah of the same length in front of it, in plan like the Ganesa cave at Cuttack (woodcut No. 23); all the larger caves at this place being either similar, or extensions of the same idea. The Thakoor cave, for instance, has a verandah 55 ft. in length, with wings extending at right angles in front of the principal façade. This cave, being two stories in height, might accommodate from 40 to 50 monks, whereas the Ganesa cave, supposing it to have been divided between each of the four doors it possesses, could only accommodate four or five.

23. Ganesa Cave.
Scale 100 ft. to 1 in. From a plan by the Author.

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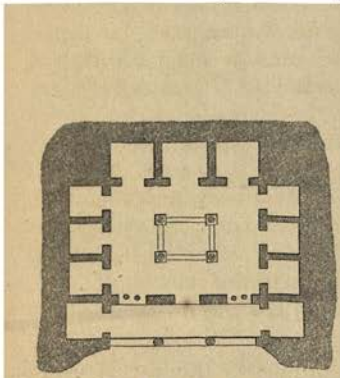
[1] For particulars of these caves I am indebted to several papers, by Capt. Kittoe, in the J. A. S. B., March, May, and September, 1847, from which the woodcut is taken.

In none of these caves is there seen either a shrine or any place where one could be placed; the probability, therefore, is, that they were attached to some sacred edifice which has long since disappeared. Another peculiarity, showing that they must have been constructed before the Christian era, is, that no trace of a sanctuary is found, nor any image of Buddha or of saints. The only actual worship of which there is any trace is that of the Bo-tree, represented on one bas-relief in a cave called the Jodeo Gopa, proving how early that worship was introduced, and how pre-eminent it was among Buddhists in those days.

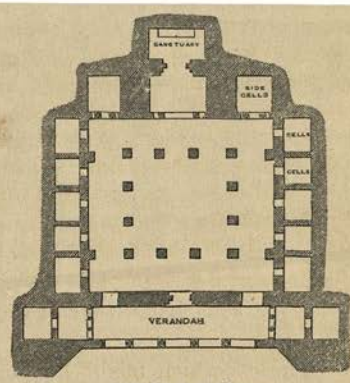
WESTERN CAVES.

Among the various groups of caves in the Bombay Presidency we find counterparts of all those existing in Bengal; but the former caves generally speaking have assumed a shape which makes a marked distinction between them and the older caves of Bengal. This consists in separating the cells from the hall around which they are placed—an arrangement, I believe, unknown in Eastern India. The oldest cave-monastery at Ajunta is a hall 36 ft. 7 in. square. It is adorned with seven niches on every side, arched in a horse-shoe shape like the great window at Karli. Of these seven niches the first, third, fifth, and seventh are blank. The remaining three are occupied in the inner sides by doors leading to cells, of which there are thus nine, on the outer side by the entrance-door and two windows.

It is evident, however, that it requires the stratum of rock in which the cave is excavated to be singularly perfect to admit of such a surface being left wholly without support. The next step, therefore, seems to have been to introduce 4 pillars on the floor, which is done at Ajunta in the cave No. 11, next in age and situation to the one last described,



24. Cave No. 11, at Ajunta.
From a plan by the Author. Scale 50 ft. to 1 in.



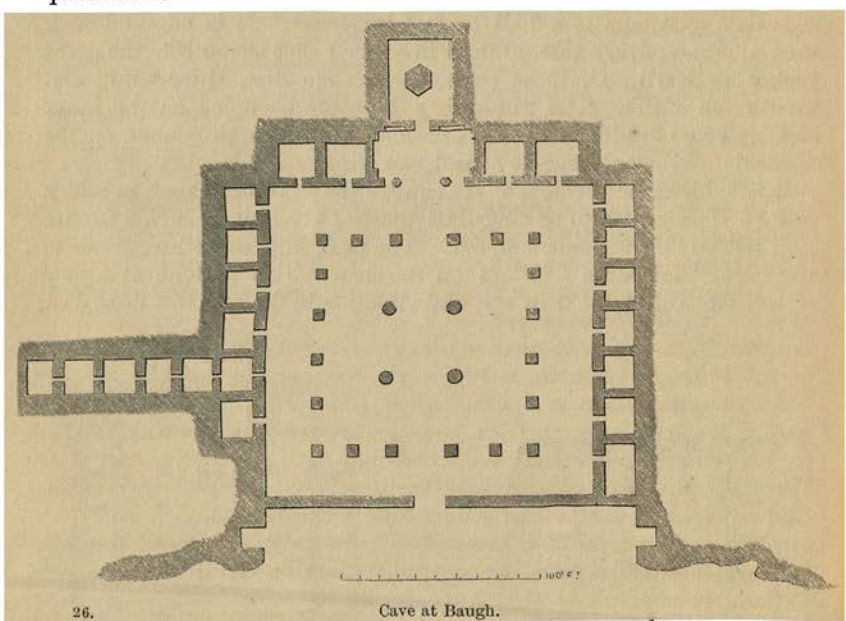
25. Cave No. 2, at Ajunta.
From a plan by the Author. Scale 50 ft. to 1 in.

which, though the area is not larger, has this necessary adjunct arranged as shown in the annexed diagram (woodcut No. 24).

The next step was to introduce 12 pillars to support the roof, there being no intermediate number which would divide by 4, and admit of an opening in the centre of every side. This arrange-

ment is shown in the woodcut No. 25, representing the plan of the cave No. 2 at Ajunta. Before this stage of cave architecture had been reached, the worship had degenerated considerably from its original purity; and these caves always possess a sanctuary containing an image of Buddha. There are frequently, besides this, as in the instance under consideration, two side chapels, like those in Catholic churches, containing images of subordinate saints, sometimes male, sometimes female.

The next and most extensive arrangement of these square monastery-caves is that in which 20 pillars are placed in the floor so as to support the roof, 6 on each side, counting the corner pillars twice. There are several of these large caves at Ajunta and elsewhere; and one at Baugh, on the Tapty, represented in woodcut No. 26, has, besides the ordinary complement, 4 additional pillars in the centre, a precaution taken evidently in consequence of the rock not being sufficiently homogeneous and perfect to be able to support itself without this additional precaution.

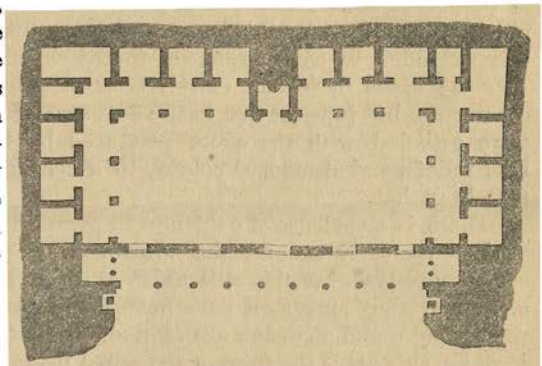


26. Cave at Baugh.
From a plan, by Capt. Dangerfield, in the Transactions of the Bombay Literary Society.

These—which might be classed, according to the terms used in Greek architecture, astylar, when having no pillars; distyle, when with two pillars in each face; tetrastyle, with four; and hexastyle with six—form the leading and most characteristic division of these excavations, and with slight modification are to be found in all the modern series.

The forms, however, of many are so various and so abnormal, that it would require a far more extended classification to enable us to

describe and include them all. In many instances the great depth of the cave which this square arrangement required was felt to be inconvenient; and a more oblong form was adopted, as in the plan of the Durbar cave at Salsette (woodcut No. 27), where, besides, the sanctuary is projected forward, and assists, with the pillars, to support the roof. In some examples this is carried even further, and the sanctuary, standing boldly forward to the centre of the hall, forms in reality the only support. This, however, is a late arrangement, and must be considered more as an economical than an architectural improvement. Indeed the dignity and beauty of the whole composition are almost entirely destroyed by it.



27. Durbar Cave, Salsette. From a plan by the Author. Scale 50 ft. to 1 in.

ORNAMENTATION OF THE CAVES.

The principal mode of embellishment adopted in these caves was painting, if not exactly in fresco, at least in some sort of distemper. In many, indeed in most instances, the plaster with which the walls were prepared to receive the coloured decorations has peeled off, owing either to the dampness of the rock, or to the mischievous violence of idle men. In some of the caves, however, at Ajunta and elsewhere, the paintings still remain nearly complete, and as fresh as the day they were painted. A competent artist, Captain Gill, of the Company's Service, has been employed for some years in copying these. When the series is complete they will not only form a most valuable illustration of Buddhist history and tradition, and of the manners and customs of India more than a thousand years ago, but they will illustrate to a very considerable extent the form and ordinance of the very buildings they adorn, as many representations of architectural objects are interspersed among the figured subjects, quite sufficiently well drawn to be understood by those who are familiar with the style they belong to.

In some of the older caves not only the walls and roof, but even the pillars, are wholly covered with stucco, and ornamented with painting. This painting is divided, generally speaking, according to the following rule. On the walls are extensive compositions of figures and landscapes; on pillars, single detached figures, representing either Buddha or Buddhist saints; while the paintings on the roof are almost invariably architectural frets and scrolls, often of extreme beauty and elegance, rivalling many of those at Pompeii and the Baths of Titus. This threefold division is in fact the only one admissible in good taste,

or only with the slightest possible modification where figures and conventional ornaments are to be combined.

At a later period many of the ornaments which had been painted on the earlier pillars came to be carved on them in relief, as happened in Europe in the transition from the Norman to the Gothic style. The pillars were naturally the first to undergo this transformation, but it was extended in some instances to the walls, and even to the roofs. In some cases there still exist traces of painting on these engraved ornaments, but it seems that in the last ages of the style the architects were satisfied with the effect produced by the light and shade of bold reliefs, and abandoned colour, to a considerable extent at least, if not altogether.

There is abundance of evidence to prove that stucco and paint were used at an early age for the adornment of the external faces of the caves; and traces of this still exist at Karli and elsewhere. In such a climate they must soon have been found perishable and unsuited to the purpose, and therefore abandoned. One of the most frequent subjects for this art is the front or principal feature of the temple itself.

This, perhaps, will be best understood by referring to the Roman or Italian style, where windows are constantly ornamented with small temple ends, or pediments, and blank spaces filled up either with blind windows crowned by pediments, or with similar forms used as niches. So at Karli (woodcut No. 18) we find all the plain faces of the hall covered with niches representing the great façade of the temple itself; and in the later caves at Ajunta these niches are always filled with cross-legged figures of Buddha or similar representations.

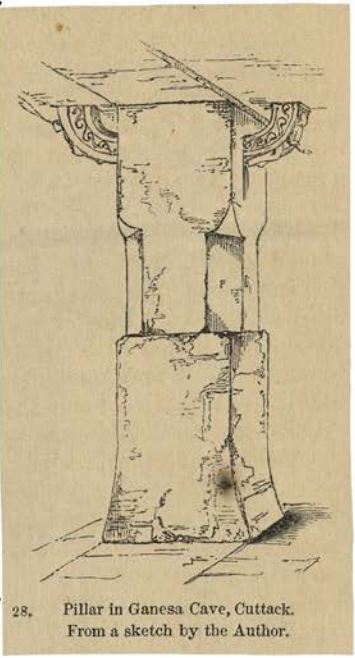
Where raised or architectural forms are used for the roofs, they are mere repetitions in stone of the wooden forms universally prevalent in India at the present day, and as common apparently then as now. The mode of construction is to lay large square beams, a foot or more square, parallel to one another, and two or three feet apart, crossed by smaller timbers, about three inches square, at such distances, say one foot, as will allow tiles to be laid upon them; these are covered with a bed of concrete and plaster, which forms a solid and impervious terrace-roof.

Pillars.

The only objects requiring further notice before leaving this branch of the subject are the pillars, which in India seem never to have been of wood, and are indeed the only parts of the architecture which do not show most unmistakeable evidence of their timber origin. My own impression is that this arose from the white ants being then, as now, the certain destroyers of any wooden object which touched the earth, and from the consequent necessity that has always existed of placing some indestructible barrier between them and those parts which must necessarily be constructed of wood.[1]

[1] To an European architect this may seem a strange and insufficient explanation of the fact; but I think most of those who have resided in India will acknowledge its validity. At all events, I can suggest no better of a fact whose universality, whatever the cause may be, admits of no doubt.

In the earliest caves, as was no doubt the case in the earliest buildings, the pillar is a square mass, from four to six diameters in height. This is brought within the domain of architecture by cutting off the angles, so as to reduce it to an octagon. In the oldest temple at Ajunta this is done for the whole height; but a more common practice is to reduce only the central part to an octagonal form, leaving the base and capital square, as in the example from the Ganesa cave at Cuttack (woodcut No. 28).



28. Pillar in Ganesa Cave, Cuttack. From a sketch by the Author.

This system is carried to a greater extent by again cutting off the angles of the octagon, so as to produce a shape of 16 sides; and these are sometimes fluted, as in the example on the next page from one of the monasteries (No. 17) at Ajunta. It shows also the construction of the roof explained above, consisting of larger and smaller beams, crossing one another at right angles, so as to support the tiles of the flat roof. In this example only the central part of the pillar is adorned with painting, the plainer members being covered with stucco, but each fluting is filled with a scroll intermixed with flowers, beautifully painted, and the discs, which are introduced where the form changes from a square to a figure of 16 sides, are also coloured.

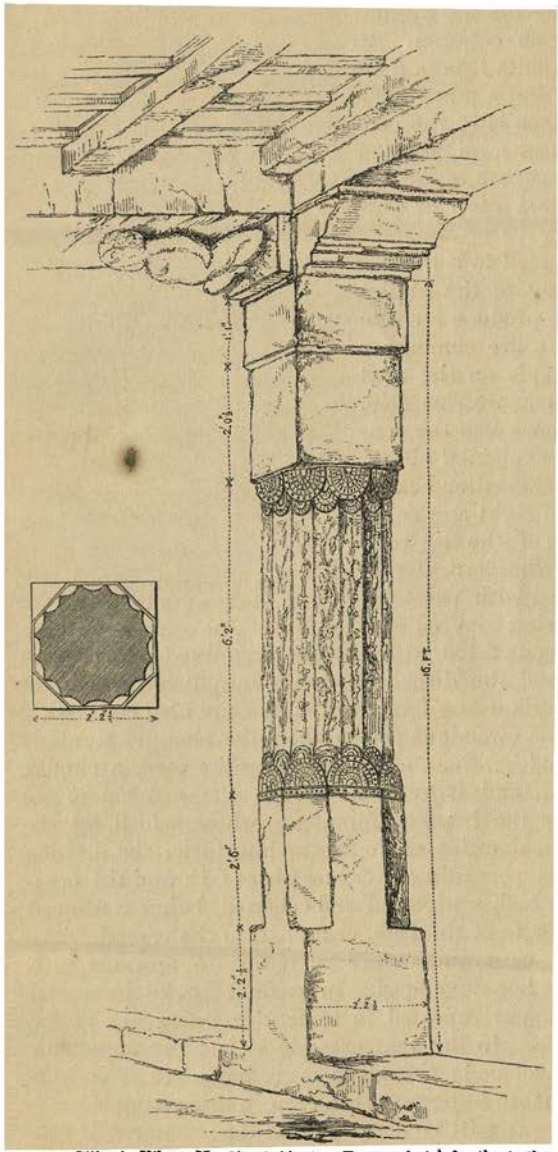
In the third example (woodcut No. 30) the pillar changes regularly from 4 to 8 and 16 sides; then, as is frequently the case, a circular member is introduced, and it returns through the octagon to the square which supports the bracket, forming a whole which may be considered as the typical order of Indian architecture; the division into 4, 8, and 16 parts pervading every member of it, and the ornaments in this instance, both sculptured and coloured, being continued with increasing richness from the base, or near it, to the capital.

These, and indeed most Indian pillars, terminate upwards in a bracket capital, more or less developed. In woodcut No. 28 the capital is only a wooden ornament repeated in stone, this being one of the oldest examples in India. In the next example it is more important, and in the last fully developed; though in many instances it is both wider and deeper, and more important than even in this example.

In all these instances it will be observed that the ornament is not, as in Grecian and Roman architecture, confined to the base and capital; but when ornament is attempted in India, it is nearly equally distributed over the whole surface of the pillar, from the ground to the horizontal member it is destined to support. This is a peculiarity which gives singular richness to some of the buildings, and when

executed with taste is particularly effective, for internal architecture at least.

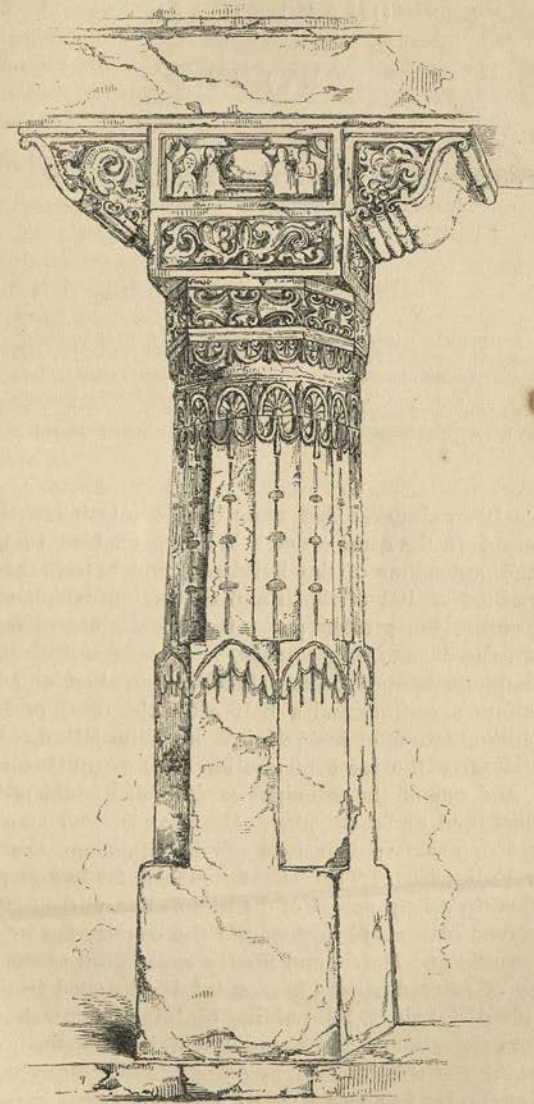
Another circumstance which gives considerable richness to the style is, that the pillars in a building are never exactly alike, but varied in design according to their position, or, as often happens, for the mere sake of variety. In some of the older and simpler caves, where there is little or no carving on the pillars, the variety is in the painting, and that only; but when they are carved, the variations are much more striking.



29. Pillar in Vihara No. 17, at Ajunta. From a sketch by the Author.

In a 20-pillared vihara, for instance, the two pillars on each side of the entrance are generally alike; so are those immediately beyond on the right and left; and so again are the next pair further removed on each side from the centre. The range on the right and left generally take their character from the last two, and those on the fourth side again increase in richness towards the centre, the two most elaborately adorned being the central pair opposite the altar. When done symmetrically in this manner, the effect is singularly pleasing, though the practice cannot be defended when mere caprice seems to guide the hand of the designer. It then requires that the variation should be so slight

as not at first sight to be apparent, or the effect is far from pleasing. In all the best Indian examples, however, these defects seem to have been avoided with singular taste and judgment.



30. Pillar at Ajunta. From a sketch by the Author.

CHAPTER III.

CEYLON.

CONTENTS.

Description of ruins at Anuradhapoora — Ruins at Mehentele — Great monastery and sacred tree at Anuradhapoora — Ruins of Pollonarua.

CHRONOLOGICAL MEMORANDA.

	DATES.		DATES.
Devenampiatissa, contemporary with Asoka. Introduction of Buddhism to Ceylon. Building of Thuparamya Tope, and that at Mehentele, &c.	B.C. 250	Walagambahu builds Abayagiri	B.C. 104
Dootoogamoni. Building of Ruanwelle Tope, and Maha Lowa Paya Monastery.	161	Abha Sena builds Lanka Ramaya	A.D. 231
		Maha Sena builds Ietawana Tope	275
		Pandu: invasion from Cashmeer	434
		Aggrabodhi changes capital to Pollonarua.	769
		Wejayabahoo, capital Dambadinia	1235

It will have been observed that none of the remains of Buddhism in India are found in the great cities. We are enabled to judge of the greatness and splendour of the buildings which have there perished from the ancient capital of the island of Ceylon, which still retains, though in ruins, the greater part of the religious monuments that adorned it in the days of its greatness.

Anuradhapoora became the capital of Ceylon about 400 years before Christ, or about a century and a half after the death of Buddha, and the fabled introduction of his religion into the island. It was not, however, till after the lapse of another 150 years that it became a sacred city, and one of the principal capitals of Buddhism in the East, which it continued to be till about the year 769, when, owing to the repeated and destructive invasions of the Malabars, the capital was removed to Pollonarua. That city flourished for two centuries; and after that, during a long period of disastrous decay, the seat of government was moved hither and thither, till the country fell into the hands of the Portuguese and Dutch, and finally succumbed to our power.

The city of Anuradhapoora is now totally deserted in the midst of an uninhabited jungle. Its public buildings must have suffered severely from the circumstances under which it perished, exposed for centuries to the attacks of foreign enemies. Besides this, the rank vegetation of Ceylon has been at work for 1000 years, stripping off all traces of plaster ornaments, and splitting the masonry in many places.

But the very desolation of its situation has preserved these ancient monuments from other and greater dangers. No bigoted Moslem has pulled them down to build mosques and monuments of his own faith;

no indolent Hindu has allowed their materials to be used for private purposes or appropriated as private plunder; and no English magistrate has yet rendered them available for mending station-roads and bridges. We may be sure, therefore, that these ruins deserve the greatest attention from the student of Buddhist architecture, and that a vast fund of information may be drawn from them when once they shall have been sufficiently explored and described.

For ten centuries Anuradhapoora continued the capital of Ceylon. Alone of all Buddhist cities it retains something like a complete series of the remains of its greatness during that period. We possess, moreover, in the Mahawanso and other Ceylonese scriptures, a tolerably authentic account of the building of all these monuments, and of the purposes to which they were dedicated.

Among the vestiges of former grandeur still to be found at Anuradhapoora, are the ruins of seven dome-shaped topes or *dagobas*, of one monastery, of a building erected to contain the sacred Bo-tree, and several other ruins and antiquities. Among these is the great mound, called the tomb of the usurper Elaala, but more probably it is a tope erected by the king Dootoogamoni to commemorate the victory over that intruder which he gained on this spot about the year 161 B.C. As it is now a mere mound, without any distinguishable outline, it will not be again alluded to.

Two of the topes are of the largest size known: one, the Abayagiri, was erected 88 B.C.; its dome is exactly hemispherical, and described with a radius of 180 ft., being thus more than 1100 ft. in circumference, and with the base and spire making up a total elevation of 244 ft., which is only 16 ft. less than the traditional height of 120 cubits assigned to it in the Mahawanso.[1] It was erected by a king Walagambahu, to commemorate his reconquest of his kingdom from some foreign usurper who had deposed him and occupied his throne for about 16 years.

The second tope is the Jetawana, erected by a king Mahasen, A.D. 275. In form and dimensions it is almost identical with the last described, though somewhat more perfect in outline, and a few feet higher, owing probably to its being more modern than its rival. These two were commemorative monuments, and not relic-shrines.

Next to these, but far more important from its sacredness, is the Ruanwelle tope, erected by king Dootoogamoni, between the years 161 and 137 B.C., over a very imposing collection of relics, of which a full account is given in the 31st chapter of the Mahawanso. Its dimensions are very similar to those of the two last described, but it has been so much defaced, partly by violence, and partly, it seems, from a failure of the foundations, that it is not easy to ascertain either its original shape or size. The same king erected another smaller tope, 260 ft. in diameter. It is now known as the Mirisiwellya. Like the last described it is very much ruined, and not particularly interesting, either from its form or history.

[1] The cubit of Ceylon is nearly 2 ft. 3 in.

Besides these four large buildings there are two considerably smaller ones, known as the Thuparamya and Lanka Ramaya, very similar to one another in size and arrangement. The first named is represented in woodcut No. 31. The tope itself, though small and

31. Thuparamya Tope. From an unpublished lithograph by the late James Prinsep.

somewhat ruined, is of a singularly elegant bell-shaped outline. Its diameter and height are nearly the same, between 50 ft. and 60 ft.; and it stands on a platform raised about 9 ft. from the ground, on which are arranged three rows of pillars, which form by far the most important architectural ornament of the building. The inner circle stands about 2 ft. from the mound, and the other two about 10 ft. from each other. The pillars themselves are monoliths 26 ft. in height, of which the lower part, to the height of 9 ft., is left square, each side being about 1 ft. The next division, 14 ft. 6 in. in length, has the angles cut off, as is usual in this style, so as to form an octagon; the two parts being of one piece of granite. These sustain a capital of the same material, 2 ft. 6 in. in height.

Accounts differ as to the number of the pillars, as Mr. Knighton says there were originally 108;[1] whereas Capt. Chapman counted 149, and states the original number to have been 184.[2]

This relic-shrine was erected by the celebrated king Devenampia-tissa, about 250 years B.C., to contain the right jawbone of Buddha, which—say the Buddhist chroniclers—descending from the skies, placed itself on the crown of the monarch. As contemporary with Asoka, it belongs to the most interesting period of Buddhist history, and is older than anything now existing on the continent of India so far as we at present know; and there is every reason to suppose it

[1] J. A. S. B. for March, 1847, p. 218.
[2] Transactions R. A. S., vol. iii. p. 474, and J. R. A. S.

now exists as nearly as may be in the form in which it was originally designed, having escaped alteration, and, what is more unusual in a Buddhist relic-shrine, having escaped augmentation. When the celebrated Tooth relic was brought hither from India at the beginning of the fourth century, it was placed in a small building erected for the purpose on one of the angles of the platform, instead of being placed, as seems generally to have been the case, in a shrine on its summit, and eventually made the centre of a new and more extended erection. Perhaps it was an unwillingness to disturb the sacred circle of pillars that prevented this being done, or it may have been that the Tooth relic, for some reason we do not now understand, was destined never to be permanently hid from the sight of its adorers. It is certain that it has been accessible during the last two thousand years, and is the only relic of its class that seems to have been similarly preserved and exhibited.

The Lanka Ramaya is extremely similar to the last, though considerably more modern, having been erected A.D. 221, and looks of even more recent date than it really is, in consequence of a thorough repair it has undergone within the last few years, which has nearly obliterated its more ancient features.

There is still another, the Saila tope, within the limit of the city, but so ruined that its architectural features are undistinguishable, though tradition would lead us to suppose it was the oldest in the place, even belonging to a period anterior to the present Buddha. The spot at all events is said to have been hallowed by the presence of the preceding one.

Besides these, there are on the hill of Mehentele, a few miles to the north-east of the city, two important relic-shrines: one of the first class erected on its summit to cover a hair that grew on the forehead of Buddha over his left eyebrow. The other, on a shoulder of the hill immediately below this, is of the same class as the Thuparamya; a small central building surrounded by concentric rows of granite pillars, which, as appears to have been the principle of this mode of decoration, rose to half the height of the central mound.

There are besides these a great number of topes of various sorts scattered over the plain, but whether any of them are particularly interesting, either from their architecture or their history, has not been ascertained, nor will be till the place is far more carefully surveyed than it has yet been.

There is another ruin at Anuradhapoora, which, if a little more perfect, would be even more interesting than these topes. It now goes by the name of the Maha Lowa Paya, or Great Brazen Monastery. We have a full account in the Mahawanso of its erection by the pious king Dootoogamoni (161 B.C.), according to a plan procured from heaven for the purpose, as well as a history of its subsequent destruction and rebuildings.

When first erected it is said to have been 100 cubits or 225ft. square, and as high as it was broad; the height was divided into nine stories, each containing 100 cells for priests, besides halls and other

indispensable apartments. Nearly 200 years after its erection (A.D. 30) it required considerable repairs, but the first great disaster occurred in the reign of the apostate Mahasena, A.D. 286, who is said to have destroyed it utterly. It was re-erected by his son, but with only five stories instead of nine, and it never after this regained its pristine magnificence, but gradually fell into decay even before the seat of government was removed to Pollonarua. Since that time it has been completely deserted, and all that remains of it now are the 1600 pillars which once supported it. These generally consist of unhewn blocks of granite about 12 ft. high; some of the central ones are sculptured, and many have been split into two, apparently at the time of the great rebuilding after its destruction by Mahasena; as it is, they stand now about 6 ft. apart from centre to centre in a compact phalanx, 40 on each face, and covering a space about 250 or 260 ft. each way. On this must have been placed a strong wooden framing, as in the Burmese monasteries at the present day—as explained in the next chapter; and the remaining 8 stories rose on this, one above the other, each diminishing as it ascended, so that the building assumed the outline of a pyramid. This, it is true, is not distinctly asserted in the Mahawanso, nor do the remains suffice to prove it. But we have strong evidence in favour of this supposition in the arrangement of later buildings, which there is every reason to believe were erected from this or similar models. The pyramidal shape is that adopted to this day in all Buddhist countries. If I am not very much mistaken, the many-storied Hindu temples in the south of India are literally only copies of such buildings as this. They all assume the pyramidal form, and are furnished with small cells on every story, precisely as we may suppose this to have been.[1]

The name of Brazen was applied to it in consequence of the roof of brass that covered it, and, gilt and ornamented as it no doubt was, it must have been one of the most splendid buildings of the East. It was as high as the topes, and, though not covering quite so much ground, was equal, in cubical contents, to the largest of our English cathedrals, and the body of the building was higher than any of them, omitting of course the spires, which are mere ornaments.

Its form and arrangement will be more clear when we have described, further on, the characteristics of the early Hindu style, which seems almost without doubt to have been copied from this.

To us these are the most interesting of the remains of the ancient city, but to a Buddhist the greatest and most sacred of the vestiges of the past is the celebrated Bo-tree. This is now reverenced and worshipped even amidst the desolation in which it stands, and has been worshipped on this spot for more than 2000 years; and thus, if not the

[1] Fa Hian, in describing the great rock-cut monastery of the Deccan as it existed in his time—about A.D. 400—says it had five stories; the lower with 500 cells, the next with 400, then 300, then 200, and the upper with 100 cells. There is a good deal that is fabulous mixed with what he says about this edifice, which, besides, he never saw himself; but it is the only one he describes in such detail, and it points to a construction similar to what I have suggested in the text.—See Foe Koue Ki, p. 314 *et seq.*

oldest, is certainly among the most ancient of the idols that still command the adoration of mankind.

When Asoka sent his brother Mahindo, and his sister Sangamitta, to introduce Buddhism into Ceylon, one of the most precious things which they introduced was a branch of the celebrated tree which still grows at Gya.[1] The branch, so says the legend, spontaneously severed itself from the parent stem, and planted itself in a golden vase prepared for its reception. According to the prophecy, it was to be "always green, never growing, nor decaying," and certainly present appearances would go far to confirm such an assertion, for, notwithstanding its age, it is small, and, though healthy, does not seem to increase. Its being evergreen is only a characteristic of its species, the Ficus religiosa; our acquaintance with it, however, must extend over a longer series of years than it at present does, before we can speak with certainty as to its stationary qualities.

It grows from the top of a small pyramid, which rises in three terraces, each about 12 ft. in height, the one above and within the other, in the centre of a large square enclosure close by the Maha Lowa Paya. But though the place is large, sacred, and adorned with gates of some pretension, none of its architectural features are such as to require notice here.

POLLONARUA.

The ruins of Pollonarua, which became the capital of the island on the abandonment of Anuradhapoora in the eighth century, show considerable traces of magnificence and splendour, though of a class very different from that displayed in the older city, and far more resembling the more ornate style of the Hindus than the simpler magnificence of the earlier Buddhists. They are in fact a link between the ancient and modern styles of architecture.[2]

The ruins of this city consist principally of one long straight and terraced street, nearly an English mile in length, bordered on either side by the ruins of temples, houses, tombs, and all the accompaniments of an Eastern city. It terminates at one end in a small rocky hill, in which are cut several temples. These are ornamented with figures of Buddha, one of which is 45 ft. high, and with rich and elaborate carvings on all sides. At the other end of the street is a building represented in the annexed woodcut (No. 32), evidently a temple, though now unroofed, and differing singularly in all its arrangements from the older examples found on the continent of India. At the inner end of it is a statue of Buddha 58 ft. in height. The relic-shrine is placed on one side, as shown in the view.

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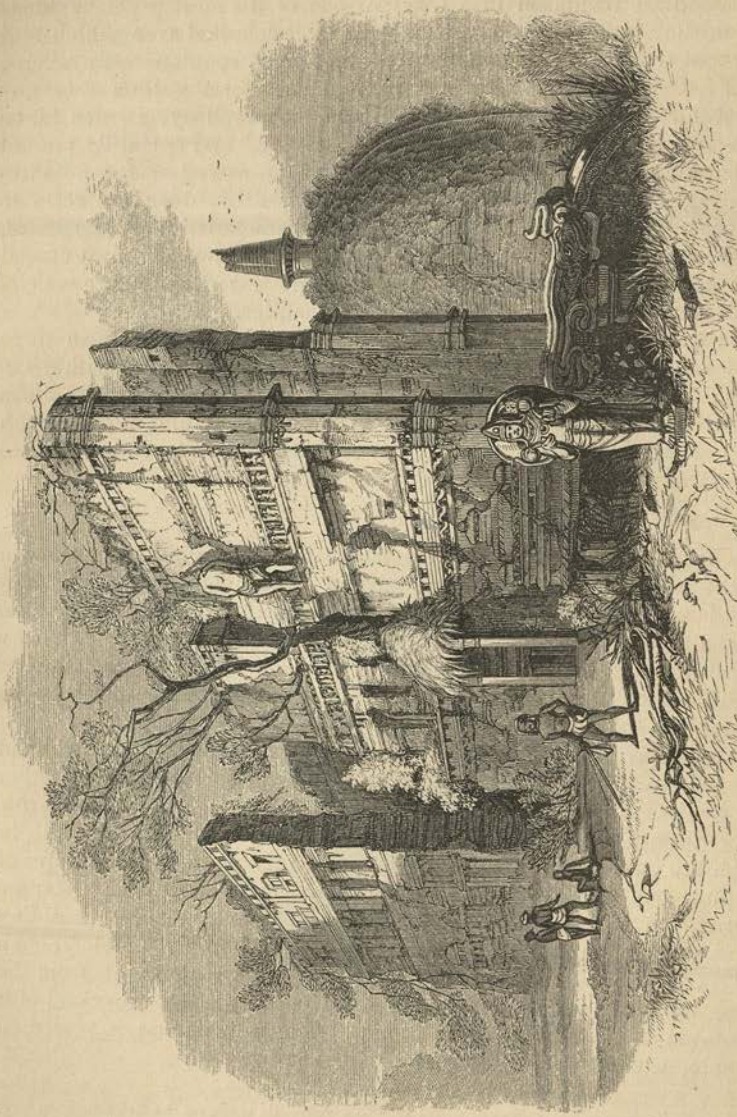
[1] Singularly enough, the natives of Behar ascribe the planting of their Bo-tree to Dootoogamoni, the pious king of Ceylon. They mistake the date, however, placing him 414 B.C.—See Buchanan Hamilton's Statistics of Behar, p. 76.

[2] The only illustrations that have yet been published are a few woodcuts in Sir Emerson Tennent's work on 'Christianity in Ceylon;' but they are only picturesque views without plans or dimensions, not available for scientific purposes. They suffice, however, to show how complete is the series of materials for a history of Buddhist art to be found in this country.



32. The Jayatawanarama—Ruins of Pollonarua. From Tennent's Christianity in Ceylon.

This temple is built with brick, and covered with stucco, and, though consequently very inferior both in material and character to the earlier edifices of the same class, is still, from its size and richness, a fine specimen of the style in its decline, and worthy to close the history of the art in the island where it had flourished for twelve centuries when this building was erected.

We know but little of the great caves of Dambool and others which lie scattered over the island. They differ from the Indian cave-temples in being natural caverns slightly enlarged and improved by art, but without having been moulded into architectural copies of buildings, as is always the case on the continent of India. What architecture they do possess is developed on applied façades of masonry, never of the same age as the caves themselves, and generally more remarkable for their grotesqueness than their beauty. Besides, the form of these caves being accidental, they want that interest which attaches so strongly to those of India, as illustrating the religious forms and ceremonies of the Buddhists in early times. Indeed, the only point of interest they now possess seems to consist in their being still used for the celebration of the same rites to which they were originally dedicated 2000 years ago.

CHAPTER IV.

BURMAH.

CONTENTS.

Forms of Burmese buildings — Dagobas at Khomadoo — Pegue — Rangoon, &c.— Monasteries.

CHRONOLOGICAL MEMORANDA.

	DATES.		DATES.
Rahamam, son of Asoka, begins to reign at Prome about	B.C. 243	Panya becomes the capital	A.D. 1300
Samundri Prome era established	A.D. 76	Pugan destroyed	1356
Samudda Raja begins to reign at Pugan	107	Panya and Chitkaing destroyed, and Ava becomes the capital	1364
Buddhagosa visits Ceylon	386	Alompra in Monchabo	1752

The kingdom of Burmah, lying to the eastward of Bengal, is one of those countries which, like Ceylon, received its religion direct from India, and has retained it to the present hour, although it has long ceased to exist in the country that gave it birth.

Like all Buddhist countries its authentic annals commence with the sovereigns of Central India, who were the contemporaries of Sakya Muni, the founder of the faith. There is no record even of names of native kings till we come to the all-powerful and all-pervading name of Asoka. He sent his son or grandson to this country to introduce the new faith, and to establish a regular sovereignty on the banks of the Irrawaddy, which seems at that time to have been very thinly peopled by nomade and half-civilised tribes.

The new king fixed his residence at Prome about the year 243 B.C., and that city continued the capital of the kingdom for about three centuries and a half. About A.D. 107 the seat of government was removed farther up the river to Pugan, which continued to be the capital for twelve centuries, when, in consequence, it is said, of some prophecy or evil omens, it was removed still farther up the river near its south-eastern bend, where three distinct cities, Chatkaing, Ava, and Amerapoora, situated near to one another, have enjoyed with frequent changes the distinction of being the royal residence.

At Prome we have no knowledge of any buildings of considerable antiquity or otherwise remarkable.

The remains of Pugan cover a space extending 10 or 12 miles along the river and to a depth of 4 or 5 miles inward. Our armies, during the war in 1825, passed and repassed through the place, and it is

noticed in several published narratives of journeys in the country. But our materials for a description of them are scarcely more ample than in the case of the older capital. For these accounts give us no particulars from which we can discover what peculiar characteristics Buddhism assumed in this country, or what degree of civilisation the Burmese had reached during the long period that this city maintained itself as capital of the empire.

From such materials as are available we collect that the city contains no ancient example of the great dome-like topes which form such remarkable objects in India and Ceylon. Some there are of considerable size, but they are modern, whereas the ancient ones are, if circular, of a tower-like form, probably more like those in Afghanistan than any others we are acquainted with. But the greater number of the religious edifices here seem to have been square in plan, with porticos and central chambers, and terminating upwards in octagonal or polygonal straight-lined pyramids or spires. It is not improbable that these buildings are monasteries with relic-shrines included in their precincts. It will be remembered that in the more modern caves at Ajunta and elsewhere the monastery had come to contain a chapel and place of worship in some measure independent of the temple to which it was originally subordinate.[1] The same seems to have been the case here, but carried to a greater extent. These buildings, therefore, being a distinct class from any of those hitherto described, may be properly called pagodas, by which name they are generally known.

One feature remarked by Colonel Symes,[2] and shown in several drawings, published and unpublished, is worthy of observation, which is the existence in these ruins of pointed arches of the Gothic form, coupled with vaulted apartments. This presents a peculiarity unknown elsewhere in Buddhist architecture, or indeed in any Indian style of any age; but until we know the epoch of the buildings in which these arches are found, it is needless speculating on their existence, or guessing at the mode of their introduction. At the same time, if they are old, which it is generally supposed they are, they form the most interesting features of these edifices.

In the modern capitals of Burmah there are no religious edifices, of brick or stone, remarkable either for their size or beauty. It will be well therefore to confine what further remarks are to be made on the pagodas of the country to those specimens which seem to be the finest and best that the land possesses.

The first of these, called Khomadoo, is situated on the opposite bank of the Irrawaddy from Ava, and a short distance lower down. It is described both by Symes[3] and Crawford.[4] According to the latter authority it is 160 ft. 9 in. high, and surmounted by a spire 22 ft. in height and 15 in diameter; the circumference of its base is 944 ft., and it is surrounded by a stockade of dwarf pillars of sandstone, about 5 ft.

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[1] See p. 31.

[2] Embassy to the Kingdom of Ava. London, 1800. Vol. ii. p. 247.

[3] Embassy to the Kingdom of Ava, vol. iii. p. 209.

[4] Embassy to Ava, 4to. edit. p. 200.

in height and 802 in number. Its form is nearly that of a perfect hemisphere.

From these particulars it is evident that it is extremely similar to the greater topes of Anuradhapoora, only slightly less in size, the diameter being apparently 300 instead of 360 ft. It also possesses the circumscribing circle of pillars which in Ceylon is confined to the smaller examples. Its age has not been ascertained. The natives consulted by Colonel Symes ascribed its erection to the most remote antiquity; while Mr. Crawford, from an inscription, dates it as late as A.D. 1626, probably the time of the last repair. From its form we should infer that it belongs to the earlier centuries of the Christian era; but without more details than we possess it is not easy to fix its age even approximately.

The next in importance is the great Shoëmadoo[1] pagoda at Pegue, of which a plan and elevation are given from those published by Colonel Symes in his account of his embassy to Ava. As will be seen from the woodcuts opposite, the plan deviates considerably from the circular form, which is exclusively used in all edifices of this class hitherto described. Here it approaches more nearly to those elaborately polygonal forms which are affected by all the Hindu builders of modern date. It returns, however, to the circular form before terminating, and is crowned, as all Burmese buildings of this class are, by an iron spire richly gilt.

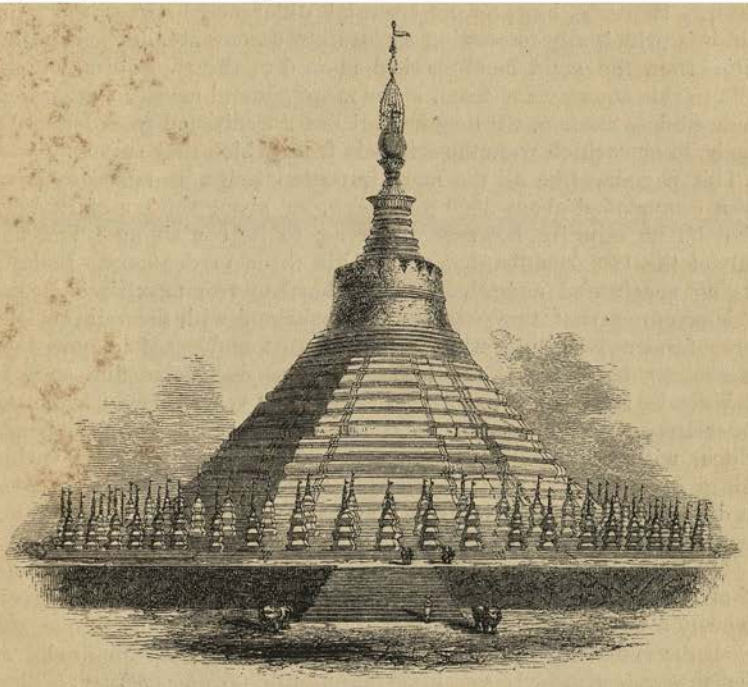
Another peculiarity is strongly indicative of its modern date; it is that, instead of a double or triple range of pillars surrounding its base, we have a double range of small models of pagodas, a mode of ornamentation that subsequently became typical in Hindu architecture; their temples and spires being covered and indeed composed of innumerable models of themselves, clustered together so as to make up a whole. As before remarked, something of the same sort occurs in Roman art, where every window and opening is surmounted by a pediment or miniature temple end, and in Gothic art, where a great spire is surrounded by pinnacles or spirelets; but in these styles it is never carried to the excess to which it goes in Hindu art. In this instance it is interesting as being one of the earliest attempts at this class of decoration.

The building stands on two terraces, the lower one about 10 ft. high, and 1391 ft. square; the upper one, 20 ft. in height, is 684 ft. square; from the centre of it rises the pagoda, the diameter of whose base is 395 ft. The small pagodas are 27 ft. high, and 108 or 110 in number; while the great pagoda itself rises to the height of 331 ft. above its terrace, or 361 ft. above the country, thus reaching a height nearly equal to that of St. Paul's Cathedral; while the side of the upper terrace is only 83 ft. less than that of the great Pyramid.

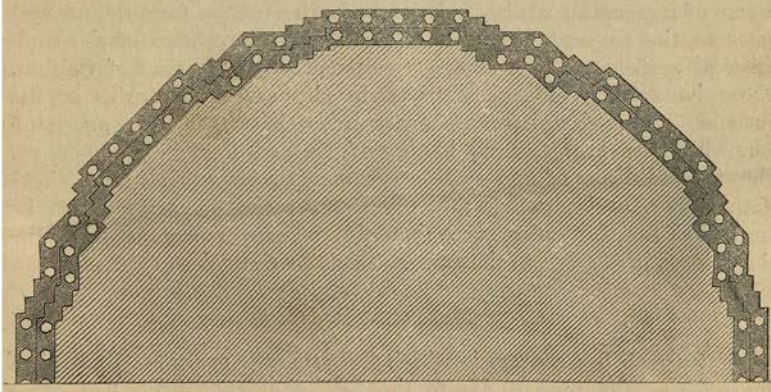
Tradition ascribes its commencement to two merchants, who raised it to the height of 12 cubits at an age slightly subsequent to that of

[1] Literally "Golden great god."

Buddha himself. Successive kings of Pegue added to this from time to time, till at last it assumed its present form, most probably about three or four centuries ago.



33. Shoëmadoo Pagoda, Pegue. From Col. Symes' Embassy to Ava.



34. Half-plan of Shoëmadoo Pagoda. From Col. Symes' Embassy to Ava. Scale 100 ft. to 1 in.

The third pagoda in importance, so far as we know, is the more generally known Shoëdagong pagoda at Rangoon, a building very similar in dimensions to the last, and by no means unlike it, except

that the outline of the base is more cut up, and the spire more attenuated—both signs of a more modern date. Its base is even more crowded by little templets than that at Pegue, and it is a few feet lower. There is, however, no essential difference between the two, and it is principally interesting as leading us one step further in the series from the solid hemispherical mound to the thin spire, which, both in this country and Siam, is the more general modern form which these edifices assume, till they lose all but a traditional resemblance to the buildings which were the originals from which they sprang.

This pagoda, like all the more important ones, is fabled to have been commenced about 2300 years ago, or about the era of Buddha himself: its sanctity, however, is owing to its containing relics, not only of the last Buddha, but also of his three predecessors—Buddha having vouchsafed eight hairs of his head to two merchants, on the understanding that they were to be enshrined with the relics of the three former Buddhas, where and when found.[1] After numerous miraculous indications, on this spot were discovered the staff of Kakusanda, believed to have lived some 3000 years before Christ, the water-dipper of Konagamma, and the bathing-garment of Kasyapa, which, with the eight hairs above-mentioned, are enshrined within this great pagoda.[2] Originally, however, notwithstanding the value of its deposit, the building was small, and it is probably not more than a century since it assumed its present form.

An immense number of smaller pagodas surround this larger one, of all sizes, from 30 ft. in height to 200 ft., and even more. There is scarcely a village in the country that does not possess one or two, and in all the more important towns they are numbered by hundreds; so that they may almost be said to be innumerable in this country. They are almost all quite modern, and so similar one to another as not to merit any distinct or separate mention. They indicate, however, a degree of increasing wealth and power in the nation, from the earliest times to the present day, and an increasing prevalence of the Buddhistical system. This is a direct contrast to the history of Ceylon, whose hour of greatest glory was in the earlier centuries of the Christian era, and was passing away more than 1000 years ago, at a time when the architectural history of Burmah first dawns upon us. Thus the buildings of one country are an exact continuation to those of the other, and together they present a series of examples of the same class ranging over more than 2000 years, reckoning from the oldest topes in Ceylon to the most modern in Burmah.

Monasteries.

As Burmah is a country in which the monastic system of Buddhism flourishes at the present day to the fullest extent, if we had some information regarding its monasteries, or *kioums* as they are called, it

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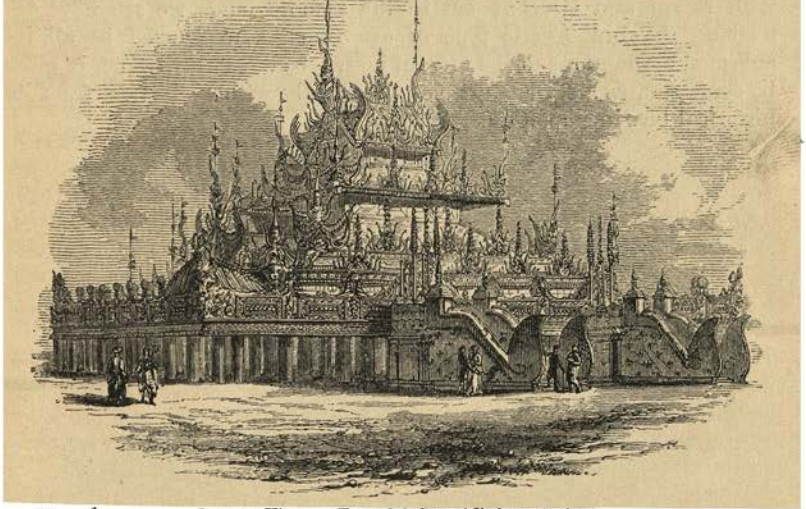
[1] See p. 4.

[2] See account of the Great Bell at Rangoon, by the Rev. G. H. Hough.—Asiatic Researches, vol. xiv. p. 270.

might enable us to understand the arrangement of the older ones. The travellers who have visited the country have been silent on the subject, principally because the monasteries are, in almost all instances, less magnificent than the pagodas to which they are attached, and are, with scarcely an exception, built of wood—a practice destructive of their architectural character, and also depriving them wholly of that monumental appearance of stability which is so essential to true architectural expression.

This peculiarity of being of wood is not confined to the monasteries; all residences, from that of the poorest peasant to the palace of the king, having been constructed from time immemorial of this perishable material. The custom has now passed into a law, that no one shall have the power of erecting buildings of stone or brick, except it be the king himself, or the edifices be of a purely religious character. Nor is this exception taken advantage of, for the king's palace itself is as essentially a wooden erection as the dwelling of any of his subjects. It is, however, not the less magnificent on this account—rather, perhaps, more so—immense sums being spent on the most elaborate carvings, and the whole being lacquered, painted, and gilt, to an extent that we have no conception of in our more sober clime.

The same profuse decorations are bestowed upon the monasteries, one of which is represented in the annexed woodcut (No. 35), showing



35. Burmese Kioum. From Col. Symes' Embassy to Ava.

a building in which all the defects arising from the use of so easily carved a material are carried to excess. If the colouring and gilding could be added, it would represent a building such as the West never saw, and, let us hope, never will see; for, however dazzling its splendour, such barbaric magnificence is worthy only of a half-civilized race.

Besides, however, its own merits, as showing the extent of richness to which this ephemeral style of art may be carried, the building is interesting as explaining how the 1600 columns of the Maha Lowa Paya of Ceylon [1] supported the lower floor of that great monastery. It also exhibits the general form of outline which I believe all these great monasteries to have possessed. The one represented here is of three stories, but is, I believe, in outline, the same as the five or nine storied edifices of which we read, but of which no example now remains to us.

The fact that all the buildings of Burmah are of wood, except the pagodas, may also explain the fact of India possessing no architectural remains anterior to the age of Asoka. Except the comparatively few masonry pagodas, none of which existed prior to his era, there is nothing in Burmah that a conflagration of a few hours would not destroy, or the desertion of a few years entirely obliterate. That the same was the practice of India is almost certain, from the essentially wooden forms still found prevailing in all the earlier cave temples; and if so, this fully accounts for the disappearance of all earlier monuments.

We know that this wooden architecture was the characteristic of Nineveh, where all the constructive parts were formed in this perishable material; and from the Bible we know that Solomon's edifices were chiefly so constructed. Persepolis presents us with the earliest instance in Asia of this wooden architecture being petrified, as it were, in consequence apparently of the intercourse its builders maintained with Egypt and Greece; but in the remote lands we are now describing the old Asiatic type of art remains unchanged in all its ephemeral splendour to the present hour: bad and barbarous, it must be confessed, as a style of art, yet not wholly without interest from its historical bearing upon other styles.

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[1] See p. 43.

CHAPTER V.

JAVA.

CONTENTS.

Buildings at Boro Buddor — Temples at Brambanam.

THE island of Java is another of those countries which received their civilisation and their arts direct from the continent of India, but by a different route from that by which they passed into Ceylon and Burmah.

Neither in the island, nor on the continent of India, are any very distinct evidences found of the early colonisation of this country, but it seems most probable that it took place in the first century of the Christian era. At that time the west of India was in a state of continuous ferment in consequence of the struggle between the Brahmins and the Buddhists, the latter of whom seem then to have gained the ascendancy under King Salivahana, who established the Saka era in the year 76 or 78 A.D., which is still used as the epochal date in Java, and these events are the earliest to which their traditions refer.

Among the Javanese traditions we find no traces of the sovereigns of central India, and neither does Asoka mention this island as one of the countries to which he sent missionaries, nor does his name appear in any of the records collected by Sir Stamford Raffles or Mr. Crawford, who are almost our only authorities on the subject. On the contrary, the earlier heroes of the Mahabhárat are the traditional rulers of the land, and all their myths are derived from Hindu and not from Buddhist sources.

Hence the first colonists seem not to have been Buddhists, but Hindus from Guzerat, or the west of India, driven to seek in the islands of the east the enjoyment of that religion from which they were debarred by the ascendancy of their rivals in their native land.

For some centuries after this date even the traditional annals are silent as to any important events, or the foundation of any great cities on the island, though we gather from them, and from the more certain testimony of Fa Hian, who visited the island A.D. 413 in sailing from Ceylon, that the intercourse was frequent between the Brahmanical possessors of both countries at this early period; and we have also his certain testimony that in those days there were no Buddhists in the country, though many Brahmins from India.[1]

[1] Foe Koue Ki, p. 360.

The Hindu kingdom of Java seems never to have extended into the western part of the island. In the earliest times it was confined to the district of Matarem, near the centre, on the southern side. Here the two greatest and most ancient groups of ruins are situated, those of Brambanam and of Boro Buddor, or the Great Buddha.

We do not know even now when Buddhism was introduced; probably not till the followers of that sect were expelled from the continent of India in the 10th or 12th century of our era, when they in their turn took refuge from the persecution of the Brahmins, in that insular asylum which ten centuries before the Hindus had sought, to avoid their intolerance and bigotry.

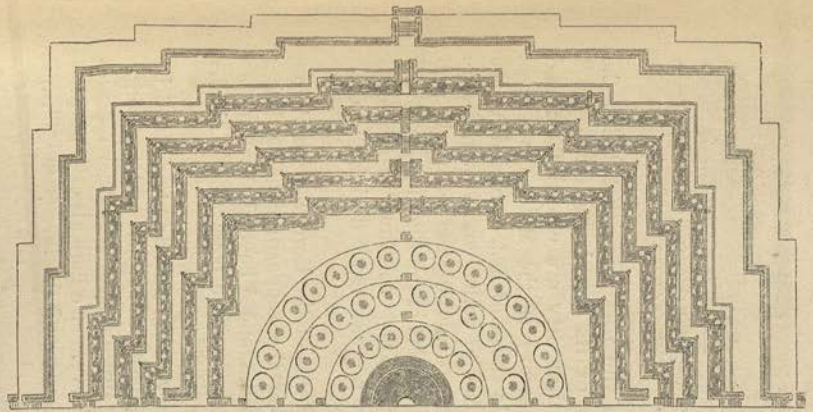
Certain it is that the most splendid temple of the Buddhists in Java, that of Boro Buddor, is assigned, both by tradition and by the evidence of its style, to the 14th century, and is indeed the only building of a decidedly Buddhist character to be found on the island.

Boro Buddor.

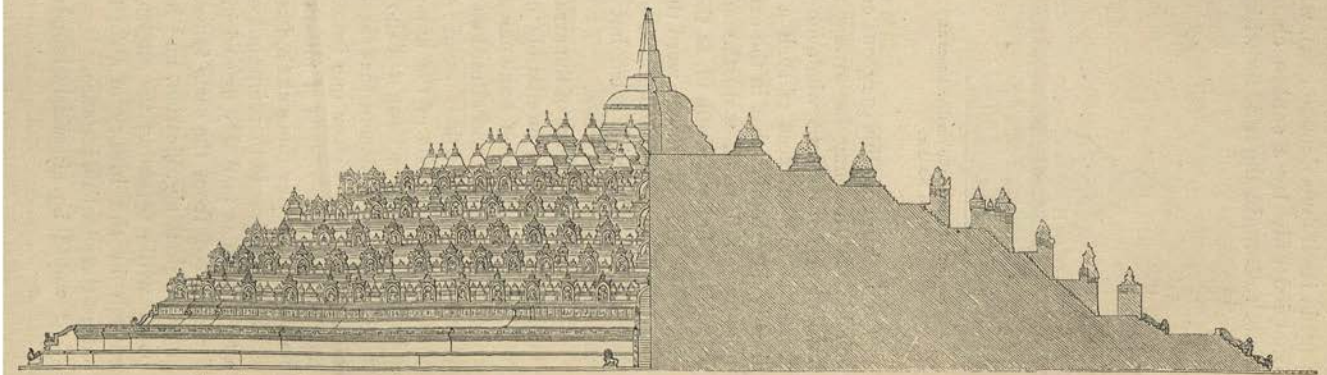
This great temple forms, if not the purest and most graceful, certainly the most curious and elaborate monument of the style found in this or any other country. Its plan and arrangements will be best understood from the woodcuts, No. 36, representing half the plan of the monument—the other half being exactly similar has been omitted—No. 37, being a section through one half, and an elevation of the other half of the building, slightly reduced from the usual scale of 50 ft. to one inch; and No. 38, a section and elevation of one of the small domes surrounding the great one.

From the plan or elevation it will be seen that it is a nine-storied pyramid of a square form, measuring about 400 ft. across. The five lower stories consist of narrow terraces running round the building, rising on an average about 8 ft. the one above the other. On their outer edge is a range of buildings of the most various and fantastic outline, covered with small spires and cupolas of various shapes and forms, the principal ones covering 436 niches, occupied by as many statues of Buddha as large as life, seated in the usual attitude with his legs crossed. Between each of these are one or two bas-reliefs representing the god in the same attitude, besides architectural ornaments and carvings of all sorts. Below these on the lower story is an immense bas-relief running round the whole building, and consequently 1600 ft. long, representing scenes from the life of Buddha and religious subjects. These are all on the outside, but the inner faces of the five ranges of buildings are even more profusely and more minutely ornamented with bassi-relievi, and seated figures, and architectural ornaments carried to an extent unrivalled, so far as I know, by any other building in any part of the world.

Above and within the upper square terrace are three circular ones, the outer ornamented with 32, the next with 24, and the upper with 16 small domes, each containing (as shown in woodcut No. 38) a seated statue of Buddha, which can be seen through the open work of their



36. Half-plan of Temple of Boro Buddor. From a plate in the second edition of Sir Stamford Raffles' History of Java. Scale 100 ft. to 1 in.



37. Elevation and Section of Temple of Boro Buddor. From an unpublished plate intended for Sir Stamford Raffles' History of Java.

roofs. The whole is surmounted by what must be considered as the pagoda itself (woodcut No. 39), which is now empty, its centre being occupied only by a sunken chamber 10 ft. deep, meant originally no doubt to contain the relic for which this splendid temple was erected.

38. Section of one of the smaller domes at Boro Buddor.

39. Elevation of principal dome at Boro Buddor. From Sir S. Raffles' History of Java.

On looking at this gorgeous edifice the first thing that strikes the beholder is the singular arrangement of its five lower terraces. I have myself no doubt whatever but that they are copied from and represent the terraces of such a monastery as the Maha Lowa Paya already described;[1] that in the originals these niches, occupied by the cross-legged figures, were the entrances to cells, whose walls were painted, perhaps sculptured, as these are. In India, as we shall presently see, the Jains, who were the successors of the Buddhists, carried this practice to a considerable extent. They continue to surround their court-yards with cells, but lodge a cross-legged divinity in each instead of a shaven priest.

Indeed, the whole of the arrangements of the lower stories of this building seem to be intelligible only on the supposition of its being built on the model of some monastery, extended beyond anything we know of that class, and altered so as to be a mere copy of the abodes of priests instead of their actual residence.

The arrangement of the upper story will be easily understood by referring to the description of the Shoëmadoo at Pegue.[2] The arrangement is the same, except that there are three ranges of smaller temples surrounding the larger one instead of two. We here observe an analogy to the three ranges of pillars that surround the base of the Thupa Ramaya and other topes at Ceylon.

The building is therefore not only a compound of a monastery with a tope, such as probably existed in India, but it is so modern, and so far removed from the early types, that almost all the parts have lost their original signification, and have been consecrated to other purposes, while retaining the ancient forms—a transformation common enough in the history of architecture, but seldom more distinctly shown than in this instance.

It would be singularly interesting if we could find some similar

[1] P. 43. [2] P. 50.

example in India, for in Java unfortunately a certain Malay element has been superinduced, which prevents our recognising at once all the parts, and it does not consequently furnish us with that amount of historic deduction which a purer example would afford. We cannot, however, doubt that it is really Buddhist, or at least a transition specimen, unlike anything else we are acquainted with in its details, and unsurpassed, so far as I know, in the amount of sculptured decoration that is lavished on every part of it.

BRAMBANAM.

Not far from the ruins of Boro Buddor are situated the temples of Brambanam, certainly one of the most extraordinary groups of buildings of its class, and very unlike anything we now find in India, though there can scarcely be a doubt but that the whole is derived from an Indian original now lost.

The great temple is a square building above 45 ft. square, and 75 ft. high, terminating upwards in an octagonal straight-lined pyramid. On each face of this is a smaller temple of similar design joined to the great one by corridors; the whole five thus constituting a cruciform building. It is raised upon a richly ornamented square base. One of the smaller temples serves as an entrance-porch. The building itself is very curiously and richly ornamented with sculpture, but the most remarkable feature of the whole group is the multitude of smaller temples which surround the central one, 239 in number. Immediately beyond the square terrace which supports the central temple stand 28 of these, forming a square of 8 on each side, counting the angular ones both ways. Beyond these, at a distance of 35 ft., is the second square, 44 in number; between this and the next row is a wide space of above 80 ft., in which only 6 temples are situated, two in the centre of the north and south faces, and one on each of the others. The two outer rows of temples are situated close to one another, back to back, and are 160 in number, each face of the square they form being about 525 ft. All these 239 temples are similar to one another, about 12 ft. square at the base, and 22 ft. high,[1] all richly carved and ornamented, and in every one is a small square cell, in which was originally placed a cross-legged figure, probably of one of the Jaina saints, though the drawings which have been hitherto published do not enable us to determine whom they represent—the persons who made them not being aware of the distinction between Buddhist and Jaina images.

The arrangement of this great group will be better understood from the woodcut on the next page, being the plan of a smaller one in the immediate neighbourhood, surrounded by only 16 subsidiary temples instead of 239, and the central one having only one cell instead of five.

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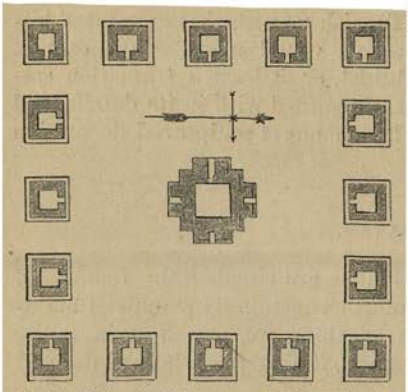
[1] The information here given is taken from Sir Stamford Raffles' History of Java, second edition, vol. ii. p. 17 *et seq.* His plans, however, do not quite agree with the measurements in the text, a mistake arising, I believe, from the scales in the original drawings—which I have before me—being in Rheinland roods, which are not always converted into English feet.

In other respects the arrangement is the same, and it is preferable for the purpose of illustration, as it immediately reminds us of the arrangement of the cells that surround the Buddhist cave-Viharas at Ajunta[1] and elsewhere, already described; and it seems hardly doubtful but that this was the arrangement of the cells of the priesthood in the original buildings in India, which, when copied in the rock, took the form we now find. It is true these cells, instead of being occupied by hermits, are either empty or have a statue in them, but, as will presently be shown, this was usual in India with the Jains, to whose religion the temples at Brambanam probably belong.



40. Small Temple at Brambanam. From a drawing at the India House. No scale.

The date given to these monuments by the natives is about the 9th or 10th century, at which time the Jains were making great progress at Guzerat and the western parts of India; and if the traditions are to be relied upon, which bring the Hindu colonists of Java from that quarter, it is almost certain that they would have brought that religion with them. If the age, however, that is assigned to them be correct, and I see no reason to doubt it, they are specimens of an earlier date and form than anything we now find in India, and less removed from the old Buddhist type than anything that now remains there.

The value of these examples will be better understood when we come to examine the Hindu and Jaina styles of architecture, the elements of which, though considerably altered here by local peculiarities, are still sufficiently distinct to enable us to understand what without them would be nearly unintelligible.

A good local history of Javanese architecture—which was nobly commenced by Sir Stamford Raffles—would be curious and highly instructive if fully carried out; and ample materials exist for writing it, though much requires yet to be done before so extensive a subject can be rendered even partially intelligible. It is rendered more difficult from the apparent inversion that took place in the order of the styles; the Jaina temples of Brambanam preceding the Buddhist of Boro Buddor; and the Hindu being mixed through all, for, though I do not know of one single temple that can be called purely Hindu, Hindu sculpture is found everywhere combined with the architecture of other styles. In Bali, where Hinduism still prevails, and in the extreme eastern parts of the island, about Majapahit and elsewhere, the case may be different.

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[1] See p. 33.

CHAPTER VI.

THIBET AND NEPAL.

CONTENTS.

Monastery of Bouddha La — Temples in Nepal.

IT would be a matter of the deepest interest if we were able to compile a satisfactory account of the Buddhist style in Thibet, for it is there that Buddhism exists in its greatest purity at the present moment, and there only is it entirely and essentially a part of the system of the people. We would gladly therefore compare the existing state of things in Thibet with our accounts of India in the days of the supremacy of the same religion. The jealousy of the Chinese, however, who are now supreme over that nation of priests, prevents free access to the country, and those who have penetrated beyond its forbidden barriers have either done so in the disguise of mendicants, and consequently neither dared to draw nor examine minutely what they saw, or have had little taste for portraying what was unintelligible, and consequently considered of very little interest.[1]

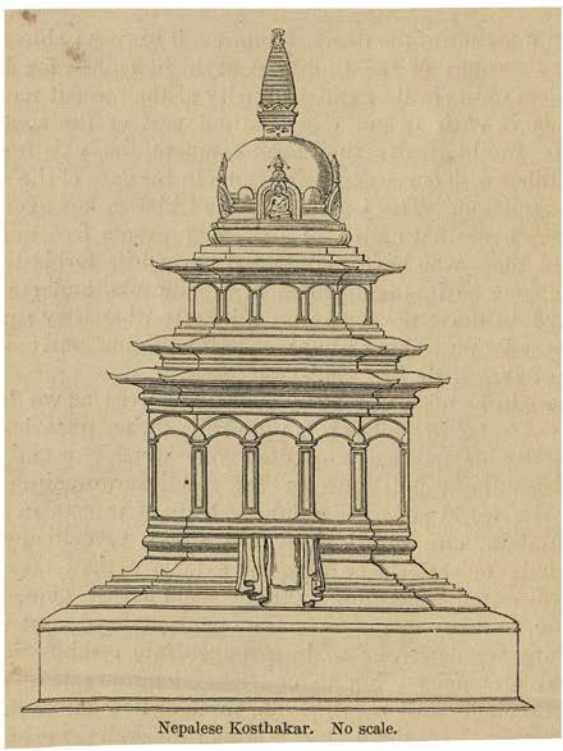
So far as can be made out from such narratives as we have, there does not seem to be in Thibet a single relic-shrine remarkable either for its sanctity or its size, nor does relic-worship seem to be the object of either the architecture or the religious worship. But as no country in the world possesses a larger body of priests in proportion to its population, and as all these are vowed to celibacy and live together, their monasteries are more extensive than any we know of elsewhere—some containing 2000 or 3000 lamas, some, if we may trust M. Huc, as many as 15,000.[2] The monasteries do not seem to be built with any regularity, or to be grouped into combinations of any architectural pretensions, but to consist of long streets of cells, most of which surround small court-yards, three or four on each side, and sometimes two or even three stories high; generally, perhaps always, with a small shrine or altar in the centre. The monastery of Bouddha La, outside the city of Lassa, where the Delai Lama resides, seems to be of more magnificence than all the rest—the centre being occupied by a building four stories high, crowned by a dome (making the

[1] Captain Turner, it is true, who was sent to Teeshoo Lomboo by Warren Hastings, has published with his interesting narrative a number of very faithful views of what he saw, but they are not selected from that class of monuments which is the subject of our present inquiry.

[2] Voyage dans le Thibet, vol. ii. p. 269. The monastery referred to is that of Séra, in the neighbourhood of Lassa, the capital.

fifth) covered entirely with sheets of gold, rather perhaps merely gilt, and surrounded by a peristyle of columns, which are gilt also. Around this central palace are grouped a number of smaller ones, where the inferior members of this great ecclesiastical order reside; but of all this it is difficult to form a distinct idea without some better drawings than the native ones which are at present alone available.

The Delai Lama, who resides in this palace, is believed by the Thibetans to be the living incarnation of the Deity, and in consequence is the principal, if not the only, object of worship in Lassa, though there are four or five subordinate incarnations in different parts of Thibet and Mongolia, who, though inferior to this one, are still objects of worship in the places where they reside, and by particular sects of Buddhists.



41. Nepalese Kosthakar. No scale.

It is this worship of a living rather than of a dead deity that seems to be the principal cause of the difference of the architectural forms of India and Thibet. In the countries we have hitherto been describing no actual incarnation of the Deity is believed to have taken place since the death of Sakya Muni, though the spirit of God has descended on many saints and holy men; in India therefore they have been content to worship images of the departed deity, or relics which recal his presence. In Thibet, where their deity is still present among them, continually transmigrating, but never dying, of course such a form of

worship would be absurd; no relic of a still living god can exist, nor is the semblance or the memory of any past manifestation thought worth preserving. *A priori*, therefore, we should scarcely look here for the same class of sacred edifices as we find in India or Ceylon. Some smaller relic-shrines, however, do exist, at least in Nepal, but scarcely differing in any essential point from those in India; and we have no representations nor measurements of those which have been described. One class of temple is found in Nepal which deserves mention; it is called *Kosthakar*,[1] and consists of a square base containing a cell intended to be occupied by a statue like those at Brambanam in Java, and is crowned by what seems to be a copy of a tope with its terminal. One is represented in woodcut No. 41, not so much on account of any merit of its own, but as explaining a form of Hindu architecture afterwards common, and also as throwing light on some of the buildings just described. The temple of Boro Buddor, for instance, is nothing more—on an immensely exaggerated scale—than such a compound temple as this; cells that were originally residences turned into image-places, and the relic shrine become a mere crowning ornament. When speaking of Hindu architecture we shall understand the full significance of the change.

The remaining countries in which Buddhist architecture has been or is practised are China and Japan. With regard to these it will be more convenient to speak of their Buddhist architecture when we speak of their art in general; for they have so altered the style, and so completely adapted it to their own peculiar idiosyncracy, that it is almost impossible to recognise the original in the copy, and the two styles have become so different that little is gained by placing them in juxtaposition.

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[1] See Trans. Royal As. Soc., vol. ii. p. v.; and Trans. A. S. B., vol. xvi. p. 442.

CHAPTER VII.

TRANSITIONAL STYLES AND CONCLUDING REMARKS.

CONTENTS.

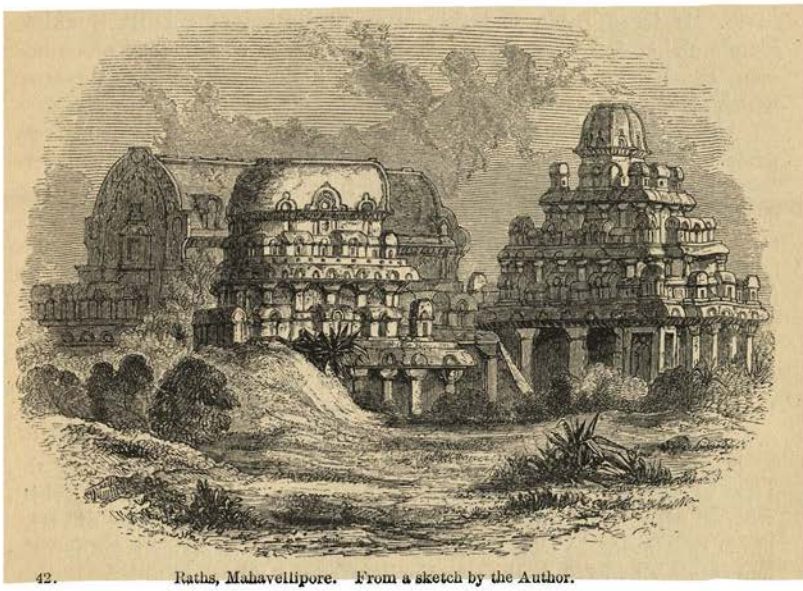
Raths of Mahavellipore — General Remarks on Buddhist Architecture.

Before leaving the subject of Buddhist architecture there is one further illustration which it will be well to quote, not only as throwing light on what has been said, but also as preparing the way for what is to follow.

On the Coromandel coast, some way south of Madras, and near the village of Sadras, is a spot well known to Indian antiquaries by the name of Maha-Balipooram, or, more properly, Mahavellipore; familiar also to English readers from the use Southey makes of it and its tradition in his 'Curse of Kehama.' Near this spot runs a long low ridge of granite hills, the highest part rising, perhaps, 100 ft. from the level of the plain. In these hills some half-dozen caves have been excavated, and several others commenced, some as excavations, others as monoliths.[1] Between the hill and the sea-shore seven masses of granite protrude from the sands, which have been carved by the Hindus, probably about 1300 A.D. The three principal of these are represented in the annexed woodcut (No. 42). It is evident that the object on the right imitates a Buddhist monastery of five stories. The lower story is wholly occupied by a great square hall; the three next stories possess central halls, diminishing in size according to their position, and surrounded by cells on the outside; the upper one is crowned by a dome, or rather such a dome-formed termination as crowns the Nepalese temple, woodcut No. 41. Altogether the building seems to represent, with great exactness, all that we know and all that we read of the Buddhist monasteries. Nor is this a mere accidental coincidence. The time at which it was executed was very little removed from that of Buddhism in this part of India. Its being cut in the rock is obviously a peculiarity of that religion. There is little or none of the extravagance of later Hindu styles in the sculptures. We must remember, too, that neither the Jains nor the Hindus introduced

[1] The best account of this spot and its antiquities is that given by Dr. Babington in vol. ii. of the Trans. R. A. S. See also Illustrations of the Rock-cut Temples of India by the author. They are also described by Messrs. Chambers and Goldingham, Trans. A. S. B., and mentioned by Mrs. Graham, Bishop Heber, and others.

anything like a new style of architecture. They adapted the Buddhist style to their own purposes, and I have no doubt that this is a very close copy of a five-storied Buddhist monastery, used as a temple.



42. Raths, Mahavellipore. From a sketch by the Author.

What confirms this view of the case is, that the next building, the central one in front, is the only representation I know in India of such a temple as those cut in the rock at Ajunta and elsewhere. The front, —turned from the spectator in the view—is exactly the front of one of the more modern Chaitya caves in the Bombay presidency; and we see here the rounded apsidal end—nowhere else represented that I am aware of—with the ornaments, which may in all instances have relieved its monotony. The side aisle is here seen to be open externally, which is not the case in the caves hitherto explored, though it probably was so in buildings; but it would evidently be impossible to represent this feature in the rock. There is also an additional story in this case, besides the ranges of cells over each of the aisles, which we have no reason to suppose existed in the older examples. But in this, as in all more modern structures of this class, we find considerable confusion between the forms belonging to the temple and those of the monastery. This is no more than might be expected when we consider that the original purposes to which those forms were adapted had ceased to exist, and that in these late copies what were originally essential constructive necessities have become mere ornamental appendages. The third building, behind the one last described, evidently belongs to the same system; nothing like it exists structurally, so far as I know, in the south of India; though in the north there is a class of oblong

temples with pointed roofs, which may be derived from the same original, and all the gateways in the south have a similar termination. There can be little doubt that it is a copy of a variety of the Buddhist temple or *Chaitya*, of which we have no exact representation in the caves. It is probable that this is an imitation of a built Buddhist temple, for it is by no means certain that those which stood alone and were capable of receiving light from all sides would have the apse, which all the rock-cut examples have.

Although these *Raths*, as they are called locally, are comparatively modern, and belong to a different faith, they certainly constitute the best representations now known of the forms of the Buddhist buildings described in Chapter II., and make their external forms more intelligible to us than they could otherwise be made from the mere internal copies of them which alone we possess in the rock-cut examples. There are no essential differences which cannot be accounted for by the consideration that the sacred caves of the Buddhists were designed for a well-understood purpose—the *Chaityas* as temples, the *Viharas* as residences—which was the invariable rule in Buddhist times. When their successors, the Hindus, began to follow their example, they copied blindly and unmeaningly. When we come to speak of the architecture of the south of India, it will be seen how completely this view of the matter explains many points in the architecture which without this would be perfectly unintelligible. The *Raths* are transition specimens in fact, and, as such, link the two styles together, the one serving to explain the peculiarities of the other.

In the preceding pages all the principal examples of the Buddhist style of architecture which are at present known to us have been noticed, and the style traced, as far as possible, from its origin to the present day. The examples at the time of its greatest brilliancy are too few and too imperfect to enable us to pass a distinct judgment on its merits as a style of art; but, even if criticised according to the most rigid rules, it will not be found deficient in beauties, though these are of an order peculiarly its own. The great halls, when perfect, must have possessed all the beauties of the choirs of Christian basilicas, which they so much resemble, and besides had the merit of a far more perfect mode of lighting, by the one great opening over the entrance, placed exactly where it should be, instead of a number of small windows scattered over the building wherever the constructive necessities of the design would admit of their being inserted.

The great domical topes also, 200 or 300 ft. in diameter, when perfect and enriched with all the ornaments we know they possessed, doubtless displayed that beauty of outline which we admire so much in the Pantheon and some of our modern churches. Their imposing size and general effect may be judged of from observing that the external diameters of the great topes at Anuradhapoora were 360 ft., while that of St. Peter's at Rome is only half as great.

Of the monasteries and residences of the kings and people we have even less means of judging, but it is not easy to speak too highly of

some of the details and of the general effect of the architectural arrangements. They are bold and elegant, and singularly well adapted to the purpose for which they were designed.

Whatever doubt there may be of the merit of Buddhist monuments as works of art, there can be none of their great historical value; for of the styles still practised it is the oldest, having been constantly in use for more than 2000 years; and it is the style of a religion which even at the present hour, when its greatest glory has passed away, still reckons among its votaries, if not a greater, at least as great a number of followers as any religion now existing on the face of the globe.

CHAPTER VIII.

JAINA.

CONTENTS.

Definition of Jainism — Temples on Mount Abu — Origin of Domes — Domes of Jains and Buddhists — Temples of Somnath — Chandravati and Sadree — Towers at Chittore.

CHRONOLOGY.

	DATES.		DATES.
Parswanath, 23rd Tirthankar about . .	B.C. 800	Munja of Ougein	A.D. 933
Mahavira, 24th and last Tirthankar (cotemporary and preceptor of Gautama Buddha), died about	600	Bhoja of Ougein, about	1000
		Kumara Pala of Guzerat converted . .	1174
Amogaversha, King of Conjeveram: revival of Jaina religion by Jina Sena Acharya	9th century A.D.	Temples on Mount Abu	1032 to 1231
		Khombo Rana of Merwar, built temple at Sadree, and pillar at Chittore . .	1418
		Udaya Sinh, third sack of Chittore by Akbar	1580

If there be difficulty in explaining the peculiarities of Buddhist architecture, from the ignorance that necessarily exists regarding the form of a religion of which so little has hitherto been published in this country, there is even more when we come to speak of the Jaina religion. For this we have no materials except occasional papers in the Transactions of learned societies; and even that information is so scanty, and the results so inconclusive, that it is almost impossible to make out either the nature or origin of the religion. It is certain that it rose to importance only on the decline of Buddhism; and that it in many respects resembles that religion. Still the Jains entirely reject and ignore the prophet who gave his name to Buddhism, and who impressed on that religion its present form and character as distinctly as Mahomet gave its character to the religion that bears his name.

The Jains reject entirely Sakya Sinha and his doctrines, but worship 24 saints, or Tirthankars as they are called, who are said to have lived in India, succeeding to one another at considerable and almost fabulous intervals. The list closes with Parswanath and Mahavira: the last of whom is admitted by both sects to have been the preceptor and friend of Buddha, dying about 600 years before Christ; the former 250 years earlier. These two are the saints now principally worshipped, and indeed the only ones that can be considered as really historical personages.

The most probable hypothesis seems to be that a form of Buddhism did exist in India from the earliest ages, that Sakya Sinha was a reformer, not of the Brahminical religion, or of anything connected

with it, but of this old antecedent Buddhism. In process of time his religion perished of innate decay, sinking under the burthen of its own immense and overgrown priesthood. An attempt was then made to restore the old faith, by reviving the pre-existing worthies, and totally ignoring the reform and its consequent monasticism, and the result of this revival was Jainism. The reform was attempted, however, at an age when the purer traditions of the old faith must have been either wholly lost or very much obscured, and when Hinduism was competing for the favour of the vulgar to an extent it was impossible to overlook. It became in consequence not a purer and more exalted faith, but a mixture of superstition and idolatry, such as Buddhism had never sunk into in its most degraded days. Still it got rid of the priesthood, and of the unintelligible mass of metaphysical and other treatises which crushed that religion; and, in consequence, it still flourishes side by side with Hinduism in most parts of India, while Buddhism is wholly extinct in the land where it first was propagated.

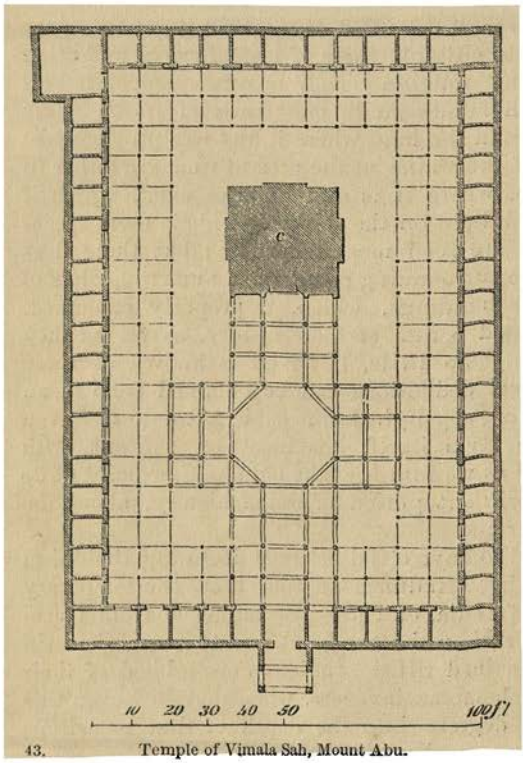
The principal seats of the Jains at the present time are either in Guzerat or in the Mysore, where it is said libraries exist, which if explored would throw much light on the subject. This is mere speculation, and till the books are seen must remain so; but there does exist, in both these and the surrounding countries, a numerous class of Jaina temples, and other buildings, which, if properly examined, would settle all the disputed points of their history, as far as they belong to historical times. So little, however, is known of these buildings, that no historical deductions can be obtained from them, and, so far from their lending any light to the subject, we do not even know the history of the style itself, but must be content with describing the architecture as we find it at the culminating point of its perfection, and the most brilliant period of Jaina history, about the 11th or 12th century of our era.

It seems at this period to have stood between declining Buddhism on the one hand, and rising Hinduism on the other, the temporary mistress of the continent of India, extending its influence from Guzerat, its principal seat, to Delhi on the one hand, and to Cape Comorin on the other. Thus it remained till the Indians were robbed of their independence by their Mahometan invaders, when they lost even this purer faith, and sank by degrees into the depth of that monstrous superstition known at present as the Hindu religion.

The oldest Jaina monuments now known to exist are probably those about Janaghur in Guzerat. The temple at Somnath and some of those about Ahmedabad appear to be of considerable antiquity; none of these, however, have yet been visited by any one who knew how to distinguish between what is old and what is new, or who could even ascribe to each religion what fairly belonged to it. Such classification must therefore be reserved for future explorers. The oldest temples I myself have seen are those on Mount Abu in Guzerat, a noble mountain of granite between 5000 and 6000 feet in height, and rising as abruptly from the sandy desert in which it stands as an island from the ocean.

On this hill are several Jaina temples of considerable beauty and extent, but two preeminently so, being built of white marble, and ornamented with all the resources of Indian art of the age in which they were erected. The more modern of the two was built by two brothers, rich merchants, between the years 1197 and 1247, and for delicacy of carving and minute beauty of detail stands almost unrivalled even in this land of patient and lavish labour.[1]

The other, built by another merchant prince, Vimala Sah, apparently about the year A.D. 1032,[2] is simpler and bolder, though still as elaborate as good taste would allow in any purely architectural object. A plan of it is annexed (double the usual scale), which will suffice to explain the general arrangements of this class of buildings, which are all tolerably similar, though of course varying considerably in extent.



43. Temple of Vimala Sah, Mount Abu.

The principal object here, as elsewhere, is a cell lighted only from the door, containing a cross-legged seated figure of the saint to whom the temple is dedicated, in this instance Parswanath. The cell is always terminated upwards by a pyramidal spire-like roof, somewhat similar to those of the numerous little temples of Brambanam in Java,[3] but more like the Hindu temples of the same age, to be described hereafter. To this is always attached a portico, generally of considerable extent, and in most instances surmounted by a dome resting on eight pillars, which forms indeed the distinguishing characteristic of the style, as well as its most beautiful feature. In this example the portico is composed of 48 pillars, which is by no means an unusual number; and the whole is enclosed in an oblong court-yard, about 140 ft. by 90 ft., surrounded by a double colonnade of smaller pillars,

[1] A view of this temple, not very correct, forms the title-page to Col. Tod's Travels in Western India.

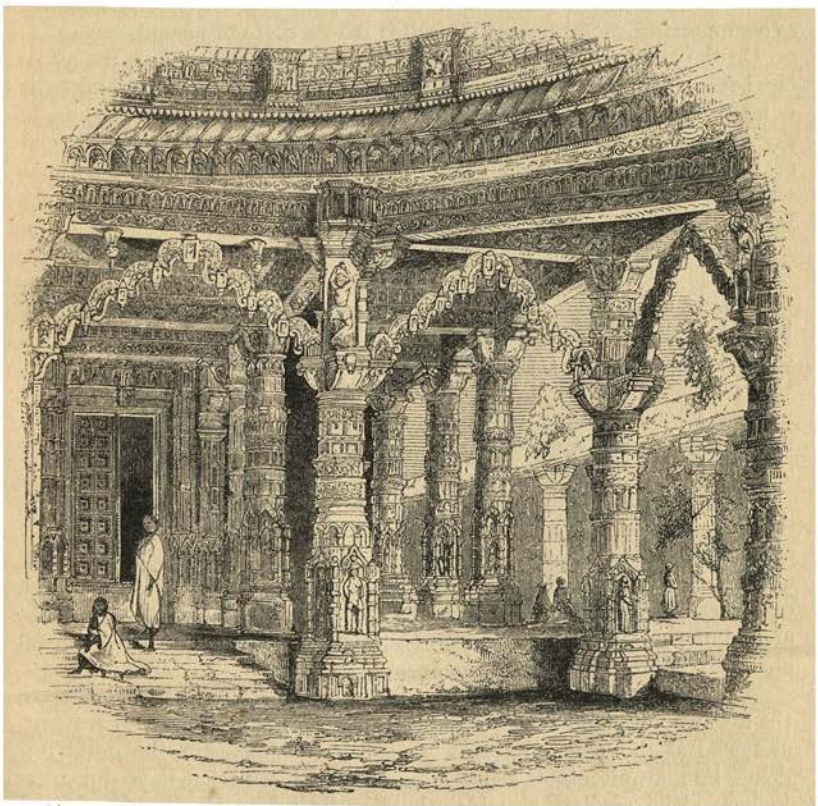
[2] See Illustrations of Indian Architecture, by the author, p. 39, from which work the plan and view are taken.

[3] See p. 59.

forming porticos to a range of cells, 55 in number, which enclose it on all sides, exactly as they do in a Buddhist vihara. In this case, however, each cell, instead of being the residence of a monk, is occupied by one of those cross-legged images which belong alike to Buddhism and Jainism, between which many find it so difficult to distinguish. Here they are, according to the Jaina practice, all of Parswanath, and over the door of each cell, or on its jambs, are sculptured scenes from his life.

Externally the temple is perfectly plain, and there is nothing to indicate the magnificence within, except the spire of the cell peeping over the plain wall, though even this is the most insignificant part of the erection.

The woodcut No. 44 will give some idea of the arrangement of the



44. Porch of Vimala Sah's Temple.

porch, but it would require a far more extensive and elaborate drawing to convey a correct impression of its extreme beauty of detail and diversity of design. The great pillars, as will be seen, are of the same height as those of the smaller external porticos; and like them they finish with the universal bracket-capital of the East; upon this an

upper dwarf column or attic, if I may so call it, is placed to give them additional height, and on these upper columns rest the great beams or architraves which support the dome; as, however, the bearing is long, at least in appearance, the weight is relieved by a curious angular strut or truss of white marble, like all the rest of the building, which, springing from the lower capital, seems to support the middle of the beam.

That this last feature is derived from some wooden or carpentry original, can, I think, scarcely be doubted; but in what manner it was first introduced into masonry construction is unknown: probably it might easily be discovered by a more careful examination of the buildings in this neighbourhood. It continues as an architectural feature down almost to the present day, but gradually becoming more and more attenuated, till at last it loses all its constructive significance as a supporting member, and dwindles into a mere ornament.

On the octagon so formed rests the dome; but as this is the principal feature of the architecture, and in fact the one which renders it a matter of interest, it may be as well, before proceeding further, to say a few words regarding the invention of domes in general, and of the particular mode of using them adopted by the Jains, without which I fear any description of their architecture will be barely intelligible.

Domes.

It is to be regretted that, while so much has been written on the history of the pointed arch, so little should have been said regarding the history of domes: the one being a mere constructive peculiarity that might very well have been dispensed with; the other being the noblest feature in the styles in which it prevails, and perhaps the most important acquisition with which science has enriched the art of architecture.

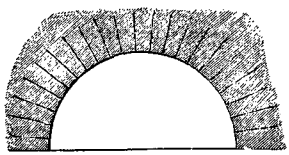
The so-called Treasuries of Mycenæ and Orchomenos, as well as the chambers in Etruscan tombs, prove that as early as ten or twelve centuries before Christ the Pelasgic races had learned the art of roofing circular chambers with stone vaults, not constructed, it is true, as we construct them, with radiating vaults, on the principle of the common arch, but by successive layers of stones converging to a point, and closed by one large stone at the apex.

Whoever invented the true or radiating arch, the Romans were the first who applied it as a regular and essential architectural feature, and who at the same time introduced its complement, the radiating dome, into architectural construction; at what period it is not now known. The earliest example, the Pantheon, is also the finest and largest; but we have lost entirely the innumerable steps by which the architects must have slowly progressed to so daring an experiment.

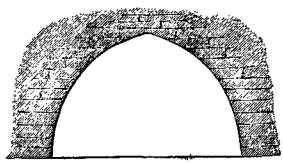
There is, however, a vast difference between these two classes of domes, which it is necessary to bear in mind in order to understand what follows.

The Roman arch and Roman dome are always constructed (woodcut

45) on the principle of voussoirs, or truncated wedges, radiating from a centre. This enabled the Romans to cover much larger spaces with their domes than perhaps was possible on the horizontal principle; but it involved the inconvenience of great lateral thrusts, continually tending to split the dome and tear the building in pieces, requiring consequently immense and massive abutments to counteract their destructive energy. This class of dome was entirely overlooked or rejected by the Gothic architects, but was taken up by the contemporary Byzantines, and made by them the principal feature of their architecture, and from them passed to the Saracenic architects, who also adopted it as their most important mode of architectural expression. To this we shall return hereafter, as the other is the form with which we are now principally concerned.



45. Radiating Arch.



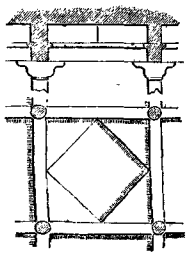
46. Horizontal Arch.

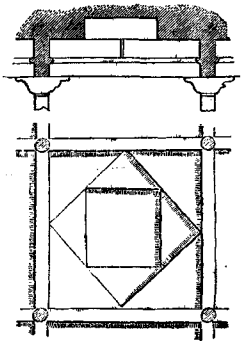
The Indian or horizontal dome never can be made circular in section, except when used on the smallest scale, but almost always takes a form more or less pointed (woodcut No. 46). From the time of the building of the Treasury of Mycenæ to the birth of Christ we have a tolerably complete series of arches and vaults constructed on this principle, but few domes properly so called. After the Christian era the first example is found in a singular tomb at Mylassa near Halicarnassus,[1] where it exhibits all the peculiarities of construction found in the Jaina temples of India. After this we lose the thread of its history till the form reappears in porches like that of the temple of Vimala Sah, where it is a perfectly established architectural feature that must have been practised long before being used as we find it employed in that building. Whether we shall ever be able to recover the lost links in this chain is more than doubtful, but it would be deeply interesting to the history of art if it could be done. In the mean time, there is no difficulty in explaining the constructive steps by which the object is now attained in India, which most probably explain also its history, though this is not, of course, capable of direct proof.

The simplest mode of roofing a small square space supported by four pillars is merely to run an architrave or stone beam from each pillar, and cover the intermediate opening by a plain stone slab. Unless, however, stones of great dimensions are available, this mode of construction has a limit very soon arrived at. The next step therefore is to reduce the extent of the central space to be covered by cutting off

[1] Fully illustrated in vol. ii. of the Dilettanti Society's Antiquities of Ionia. A woodcut of it will be given further on.

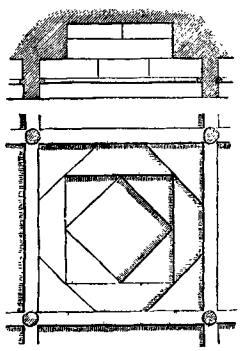
its corners; this is done by triangular stones placed in each angle of the square, as in woodcut 47, thus employing five stones instead of

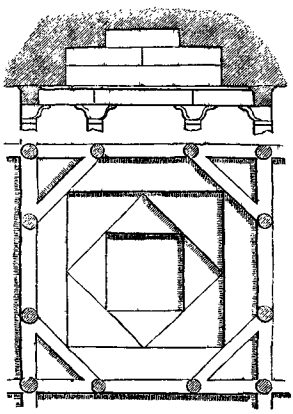




47. Diagrams of Roofing. 48.

one. By this means, the size of the central stone remaining the same, the side of the square space roofed is increased in the ratio of 7 to 10, the actual space being doubled. The next step in the process (woodcut 48) is by employing 3 tiers and 9 stones instead of 2 tiers and 5 stones, which quadruples the area roofed. Thus, if the central stone is 4 ft., by the second process the space roofed will be about 5 ft. 8 in., by the third 8 ft. square; by a fourth process (woodcut 49), 4 tiers and 13



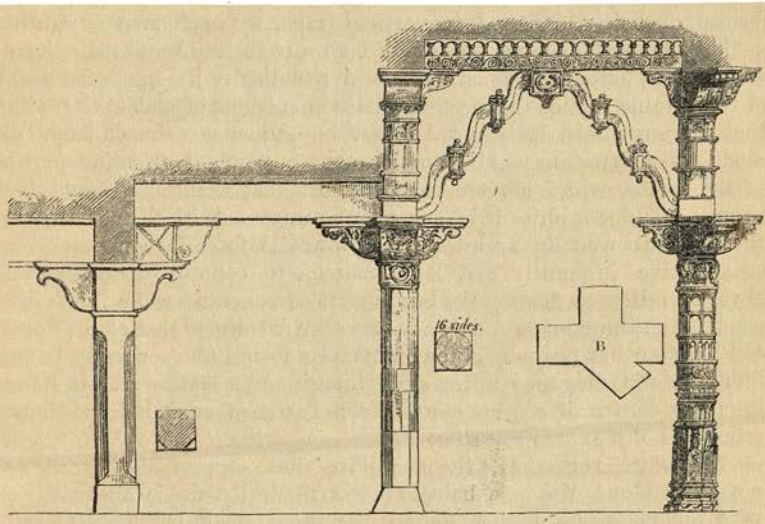


49. Diagrams of Roofing. 50.

stones are used, and the extent roofed may be 9 or 10 ft., always assuming the central stone to remain 4 ft. square. With 4 pillars the process is seldom carried further than this, but with another tier and 8 pillars, as shown in woodcut 50, it may be carried on a step further, and this is exactly the extent to which it is carried in the tomb at Mylassa above referred to; but in this, as in all instances of octagonal domes in this style, instead of the octagonal form being left as such,

there are always 4 external pillars at the angles, so that the square shape is retained, with 12 pillars, of which the 8 internal pillars may be taken as mere insertions to support the long architrave between the 4 angular pillars.

It is evident that here again we come to a limit beyond which we cannot progress without using large and long stones. This was sometimes met by making the lower course of 16 sides, by cutting off the angles of the octagon. When this has been done an awkwardness arises in getting back to the square form. This was escaped in all the instances I am acquainted with, by adopting circular courses for all above that with 16 sides. In many instances the lower course with 16 sides is altogether omitted, and the circles placed immediately on the octagon. It is difficult to say how far this system might be carried constructively without danger of weakness. The Indian domes seldom exceed 30 ft. in diameter, but this may have arisen more from the difficulty of getting architraves above 12 or 13 ft. in length to support the sides, than from any inability to construct domes of larger diameter in themselves. This last difficulty was to some extent got over by a system of bracketing, by which more than half the bearing of the architrave was thrown on the capital of the column, as shown in woodcut 51. Of course this method might have been carried to any



51. Diagram of Indian construction.
B. Form of bracket capital in the angle of an octagonal dome.

extent, so that a very short architrave would suffice for a large dome; but whether this could be done with elegance or not is another matter. The Indians seem to have thought not; at least, so far as I know, they never carried it to any extent. Instead of bracketing, however, they sometimes used struts, as in the instance under consideration, the temple of Vimala Sah, but it is questionable whether that could

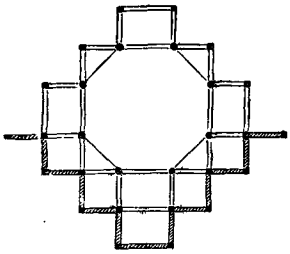
ever be made a really serviceable constructive expedient in stone architecture.

The great advantage to be derived from this mode of constructing domes was the power it gave the architect of placing them on pillars without having anything to fear from the lateral thrust of the vault. The Romans never even attempted this, but always, so to speak, brought their vaults down to the ground, or at least could only erect them on great cylinders, which confined the space on every side. The Byzantine architects, it is true, cut away a great deal of this substructure, but nevertheless they never could get rid of the great heavy piers they were forced to employ to support their domes, and in all ages were forced to use either heavy abutments externally, or to crowd their interiors with masses of masonry, so as in a great measure to sacrifice either the external effect or internal convenience of their buildings to the constructive exigencies of their domes. This in India never was the case; all the pressure was vertical, and it only required sufficient strength in the support to bear the downward pressure of the mass, and stability was insured—an advantage the importance of which is not easily over-estimated.

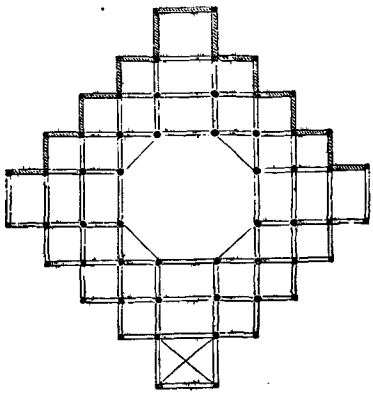
One of the consequences of this mode of construction was, that all the decoration of the Indian domes was horizontal, or, in other words, the ornaments were ranged in concentric rings, one above the other, instead of being disposed in vertical ribs, as in Roman or Gothic vaults. This arrangement allows of far more variety being introduced, without any offence to good taste, and practically has rendered some of these Jaina domes the most exquisite specimens of elaborate roofing that can anywhere be seen. Another consequence deduced from this mode of construction was the employment of pendants from the centres of the domes, which are used to an extent that would have surprised even the Tudor architects of our own country. With them, however, the pendant was an architectural "tour de force," requiring great constructive ingenuity and large masses to counterbalance, and is always tending to destroy the building it ornaments; while the Indian pendant, on the contrary, only adds its own weight to that of the dome, and has no other prejudicial tendency. Its forms, too, generally have a lightness and elegance never even imagined in Gothic art; it hangs from the centre of a dome more like a lustre of crystal drops than a solid mass of marble or of stone.

As before remarked, the 8 pillars that support the dome are never left alone, the base being always made square by the addition of 4 others at the angles. There are many small buildings so constructed with 12, but oftener 2 more are added on each face, making 20, as shown in the upper side of the diagram (52); or 4 on each face, making 28; or again, 2 in front of these 4, or 6 on each face, so as to make 36; and the same system of aggregation is carried on till the number reaches 56 (woodcut 53), which is the largest number I ever saw surrounding one dome; but any number of these domes may surround one temple, or central dome, and the number of pillars consequently be multiplied *ad infinitum*. When so great a number of

pillars is introduced as in the last instance, it is usual to make the outmost compartment on each face square, and surmount it with a smaller dome. This is sometimes done even with the smallest number, but not so frequently.



52. Diagram Plan of Jaina Temple.



53. Diagram of Jaina Temple.

It will be observed that this arrangement makes the principal aisles wider than the side ones, in the ratio of 10 : 7 (or rather 1000 : 707), which for aisles of the same height is perhaps the most pleasing proportion that can be imagined. In Gothic churches the principal aisles are generally twice as wide as the side ones, but they are also twice as high, which restores the proportion. Here, where the height of all is the same, or nearly so, this gradation just suffices for variety, and to mark the relative importance of the parts, without the one overpowering the other: and neither has the appearance of being too broad or too narrow.

It is of course difficult for those who have never seen a building of the class just described to judge of the effect of these arrangements; and they have seldom been practised in Europe. There is, however, one building in which they have accidentally been employed to a considerable extent, and which owes its whole beauty to the manner in which it follows the arrangement above described. The building is Sir Christopher Wren's church of St. Stephen's, Walbrook. Internally its principal feature is a dome supported on 8 pillars, with 4 more in the angles, and 2 principal aisles crossing the building at right angles, with smaller square compartments on each side. This church is the great architect's masterpiece, but it would have been greatly improved had its resemblance to a Jaina porch been more complete. The necessity of confining the dome and aisles within 4 walls greatly injures the effect as compared with the Indian examples. Even the Indian plan of roofing, explained above, might be used in such a building with much less expense and less constructive danger than a Gothic vault of the same extent.

It would be a curious subject of speculation to find out whether the Buddhists ever built domes. At first sight, almost every one would be inclined to answer that they did, so universally do domical forms appear in all their topes; and it is very difficult to believe that they should have adopted such a form so generally, without attaching to it some more meaning than we can trace in it; for it is neither the usual form of a tumulus, nor of any sort of roof or covering, except that of a dome of construction. Notwithstanding, however, this *primâ facie* evidence, added to our knowledge that the Jains adopted the dome at a very early period, and made it the principal feature in their architecture, it still appears probable that the Buddhists never constructed, or knew of, a true dome of any sort.

In the first place, no tope shows internally the smallest trace of a chamber so constructed, nor do any of the adjacent buildings incline to such a mode of construction, which must ere now have been detected had it ever existed.

In the next place, no one of the caves or rock-cut temples of any sort shows any tendency even to this architectural form. In them everything is a direct imitation of some wooden construction, and in no one instance, that I am aware of, is there a semblance of a stone roof of any kind, nor even of an arch, either horizontally constructed or on the radiating principle; much less of a dome, which is a far more complicated and difficult thing to construct than a mere arch. I think, therefore, it must be admitted that they were ignorant of the form, or if they knew it that they still adhered, as many races and nations have done before and since their time, to peculiar and characteristic styles of their own.

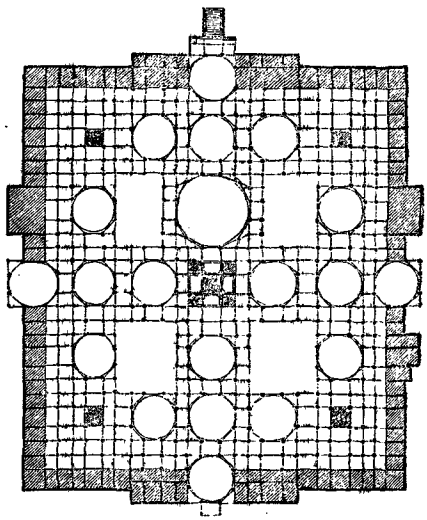
After this digression, little remains to be said of Jaina architecture, except to point out the principal buildings in this style so far as they are known. The oldest are those at Jonaghur, in Guzerat; but they have never been either described or drawn in such a manner as to render them intelligible. The same may almost be said of the famous temple of Somnath, against which Mahmoud, the Gaznavide, directed his famous campaign in the year 1025. A short account of it is given by Colonel Tod, in his Travels in Western India; and a view published by Captain Postans enables us to ascertain that it is a 56-pillared portico, like the one represented in woodcut No. 53, with a central and 4 angular domes, but not remarkable either for its size or its beauty. It is now converted into a mosque, and considerably spoilt in the process.

The other Jaina temples of Guzerat are almost wholly unknown to us; so are those of the Mysore, though there is every reason to believe that some of them are of great beauty and magnificence.

At Chandravati, a few miles to the south of Mount Abu, there are many remains of Jaina temples of great beauty. The place, however, is now wholly deserted, and has in consequence been used as a quarry by the neighbouring towns and villages, so that little remains in a perfect state. To the northward of this there are many temples, but none apparently of great antiquity. The most flourishing period of the style

appears to have been that of Khumbo Rana, of Oudeypore, A.D. 1418 to 1468, who, during his long and prosperous reign, filled his country with beautiful buildings, both civil and ecclesiastical. Amongst others he built the Temple of Sadree, situated in a deserted glen, running into the western slope of the Aravulli, below his favourite fort of Komulmeer. Notwithstanding long neglect, it still is nearly perfect, and is the most complicated and extensive Jaina temple I have ever myself seen.

From the annexed plan it will be perceived that it is nearly a square, 200 ft. by 225 ft., exclusive of the projection on each face. In the centre of this stands the great shrine, not, however, occupied, as usual, by one cell, but by four; or rather four great niches, in each of which is placed a statue of Adinath, or Rishabdeva, the first and greatest of the Jaina saints. Above this are four other niches, similarly occupied, opening on the terraced roofs of the building. Near the four angles of the court are four other smaller shrines, and around them, or on each side of them, are 20 domes, supported by about 420 columns; four of these domes, the central ones of each group, are three stories in height, and tower over the others; and one, that facing the principal entrance, is supported by the very unusual number of 16 columns, and is 36 ft. in diameter, the others being only 24 ft. Light is admitted to the building by 4 uncovered courts, and the whole is surrounded by a range of cells, most of them unoccupied, each of which has a pyramidal roof of its own.



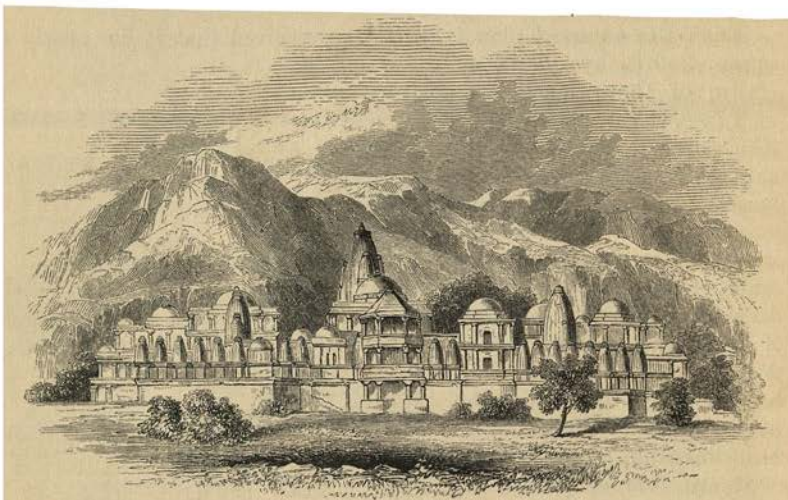
54. Plan of Temple at Sadree. From a plan by the Author. Scale 100 ft. to 1 in.

The general external effect of the Sadree Temple may be judged of by woodcut No. 55; owing to its lofty basement, and the greater elevation of the principal domes, it gives a more favourable impression of a Jaina temple than is usually the case; the defect of these buildings generally being their want of architectural design on their exterior faces.[1]

The immense number of parts in the building, and their general smallness, prevents its laying claim to anything like architectural grandeur; but their variety, their beauty of detail—no two pillars in

[1] A view of the interior is given in the author's Illustrations of Indian Architecture, plate x.

the whole building being exactly alike—and the grace with which they are arranged, the tasteful admixture of domes of different heights with flat ceilings, and the mode in which the light is introduced, combine to produce an excellent effect. Indeed I know of no other building in India of the same class that leaves so pleasing an impression, or affords so many hints for the graceful arrangement of columns in an interior.



55. External View of the Temple at Sadree.

Besides its merits of design, its dimensions are by no means to be despised; it covers altogether about 48,000 square feet, or nearly as much as one of our ordinary mediæval cathedrals, and, taking the basement into account, is nearly of equal bulk; while in amount of labour and of sculptural decorations it far surpasses any.

The other Jaina temples with which I am acquainted are generally less extensive and less interesting than the two above described; frequently they consist only of a square cell, covered with a pyramidal spire, and a porch of greater or less extent, without the enclosing court and its accompaniment of cells, &c.; although it probably was always intended that they should have this if completed.

In the Bengal provinces several of these Jaina temples have been converted into mosques, constituting some of the few remains of more ancient times that the bigotry of the Moslems has spared to us. One still exists at Canouge, on the Ganges, the only really ancient building remaining of that great city. Another, though of more modern date, is found at Dhar, near Mandoo, in Malwa. But by far the most remarkable is the collection of Jaina remains around the Kootub Minar, at old Delhi, where they form the most picturesque and interesting group of ruins now found in Northern India, and for elaborate exuberance of detail are almost unrivalled even in India.

The process by which this conversion of a Jaina temple to a Mos-

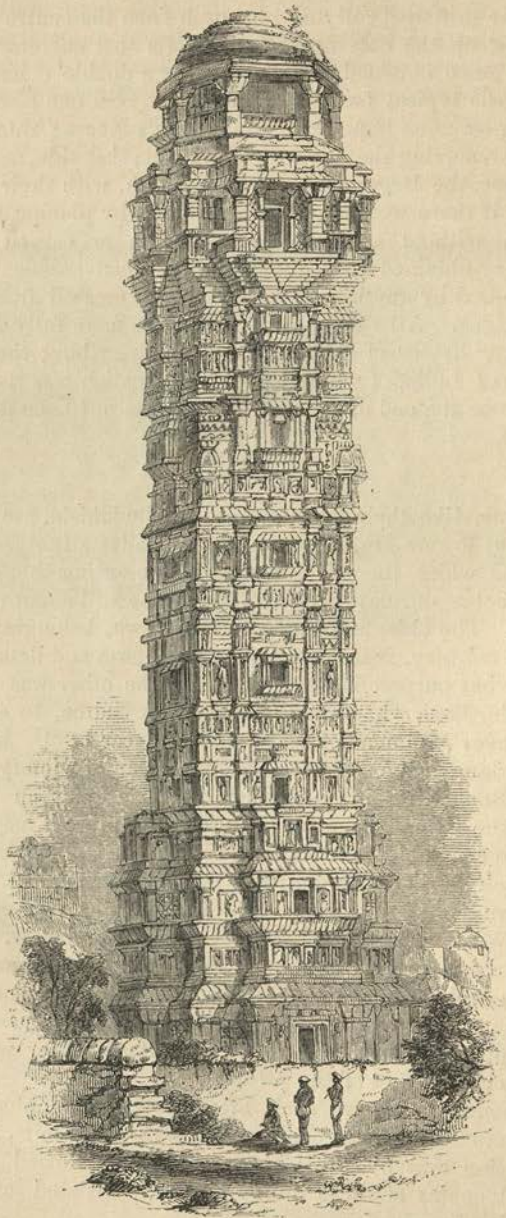
lem mosque was effected will be easily understood by referring to the plan of that of Vimala Sah, on Mount Abu (woodcut 43, p. 70). By removing the principal cell and its porch from the centre of the court, and building up the entrances of the cells that surround it, a court-yard was at once obtained, surrounded by a double colonnade, which always was the typical form of a mosque. Still one essential feature was wanting—a more important side towards Mecca; this they easily obtained by removing the smaller pillars from that side, and re-erecting in their place the larger pillars of the porch, with their dome in the centre, and, if there were two smaller domes, by placing them at each end. Thus, without a single new column or carved stone being required, they obtained a mosque which, for convenience and beauty, was unsurpassed by anything they afterwards erected from their own original designs. All this, however, will be more fully illustrated in a subsequent chapter of this work, when describing the Mahometan architecture of India, of which this transformation was the commencement, as it was the end of the style which has just been described.

TOWERS.

The Jains, like their predecessors the Buddhists, are great tower-builders; but towers are, in themselves, frailer structures than temples, besides which there is less zeal in preserving them, so that few remain perfect to our day. Two of these are still standing in the fort of Chittore. The older and smaller of the two, belonging apparently to the tenth century, is the most elegant in form and detail. It is not known for what purpose it was erected.[1] The other was raised by the same Khumbo Rana who built the temple at Sadree, to commemorate his victory over Mahmoud of Malwa, in the year 1439. It therefore is in Buddhist language a *Jaya Sthamba*, or pillar of victory, like that of Trajan at Rome, but in infinitely better taste as an architectural object than the Roman example, though in sculpture it may be inferior. As will be seen from the woodcut (No. 56) it is 9 stories in height, each of which is distinctly marked on the exterior. A stair in the centre communicates with each, and leads to the two upper stories, which are open, and more ornamental than those below. It is 30 ft. wide at the base, and more than 120 ft. in height; the whole being covered with architectural ornaments and sculptures to such an extent as to leave no plain parts, while at the same time this mass of decoration is so kept under, that it in no way interferes either with the outline or the general effect of the pillar.

The Mahometans, as we shall afterwards see, adopted the plan of erecting towers of victory to commemorate their exploits, but the most direct imitation was by the Chinese, whose 9-storied pagodas are almost literal copies of these Jaina towers, translated into their own peculiar mode of expression.

[1] See Illustrations of Indian Architecture, by the author, plate ix.



56. Tower at Chittore.

Of the civil architecture of the Jains we know little. In the few buildings remaining there is nothing to distinguish them from those of the Hindus, and nothing that can at all vie either in interest or beauty with the temples we have just been describing. These temples, though smaller than those of the Southern Hindus, and less grand than some of the Buddhist remains, are still, I must think, the most pleasing and elegant specimens, of internal architecture at least, that are now to be found in India. Could they be traced to their source, they would probably afford as pleasing a chapter of architectural history as any of the second-class styles we are acquainted with. At present the style is less known than any of the others found in India, and its history can scarcely be said to have been even broached, much less written by any of those who have hitherto given their attention to the subject.[1]

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[1] In the above account of Jaina architecture I have omitted all allusion to the Indra Subba group of caves at Ellora, which are generally, and, I believe, correctly, ascribed to the Jains. I have done this because structural examples are so much more easily understood, that they are always preferable when they exist, and there is nothing in these caves remarkable in itself, nor anything that would throw more light on the subject than has been done by the examples above quoted. They look much more like Buddhist caves without cells than anything the Jains ever built, so far at least as we know, and, though interesting as specimens of cave architecture, have not the same merit as structural buildings. Illustrations of them will be found in Daniell's Views in the East.

BOOK II.

HINDU ARCHITECTURE.

CHAPTER I.

SOUTHERN HINDU.

CONTENTS.

Historical notices — Form of Temples — Porches of Temples — Gateways — Pillared Halls — Temples at Seringham, Trivalur, Tinnevelly, &c. — Kylas at Ellora — Construction of Rock-cut Temples — Modern Hindu style in the South.

CHRONOLOGY.

	DATES.		DATES.
Kula Sechara founds Madura about the Christian Era.		Vira Chola builds temple at Chillumbrum; Ari Vari Deva, his grandson, completes temple at Chillumbrum	A.D. 1004
Vamsa Sechera rebuilds it, ninth century; founds the college of Madura.		Kylas at Ellora, excavated by Cholan princes about	1000
Vikrama Chola—rise of Cholan supremacy, capital Tanjore	A.D. 827	Rise of Chalukya power	1058
		Trimul Naik rebuilds Madura	1621

The architecture of the Hindus may be divided into three perfectly distinct, though contemporary, styles. The first being the Southern Hindu—that practised by the Tamul races of the south—and wholly confined to the countries lying between Cape Comorin and the Nerbuddha or Vindya range.

The second, the Northern or Arian Hindu, found only between the Himalaya and the northern boundary of the last-mentioned style, in the countries into which the Arian or Sanscrit-speaking races penetrated, and where they settled, which are now known as the Bengal Presidency.

The third style is found only in Cashmere and the Punjab; it differs considerably from the other two, though possessing more similarity to the southern style than to that which intervenes between them.

Of the Northern Hindu style we have very few remains, and we shall hereafter see reason to believe that the art of temple-building never was practised in the North nearly to the extent which we find to have prevailed in the South.

There is perhaps no country in the world where temple-building has received so extraordinary a development as in the south of India,

taking the amount and the circumstances of the population into account. At no period of their history did the Tamul races rise to anything like importance politically, nor have we any reason for believing that these countries were ever more populous than they are at present. In literature they have done nothing original, all that they possess being borrowed directly from the Sanscrit of the Arian races of the north. In science, it need scarcely be added, they have made no advance whatever. Yet this country is covered with temples which, for extent and amount of labour bestowed on them, may rival Karnac and the most extensive temples of Egypt, and surpass even the cathedrals of the middle ages in complexity of design and variety of detail. Their relative merit as works of art is another question, which must I fear be decided against them; but, as specimens of patient devotional labour, they, so far as I know, stand as yet unrivalled in the architectural history of the world.

HISTORICAL NOTICE.

If a line be drawn east and west from Madras to Mangalore, it will cut off a portion of India forming nearly an equilateral triangle of 400 miles a side, within which are situated almost all the great temples of Southern India.

To the north of this line the country seems never to have been sufficiently thickly peopled, at least in ancient times, for any rich or powerful states to have been established within its boundaries. Consequently, we do not find many temples there, and those that are known to exist have been so imperfectly drawn or described that they cannot at present be rendered available for elucidating the history of the style.

The country to the south of this line has from the earliest times been inhabited (above the Ghâts at least) by people of the pure Tamul race, who, so far as we know, are aboriginal in the country. As far as their traditions reach they have been divided into three kingdoms or states, the Pandyas, the Cholas, and the Cheras, forming a little triarchy of powers, neither interfered with by the other nations of the earth, nor interfering with those beyond their limits. During the greater part of their existence all their relations of war and peace have been among themselves, and they have grown up a separate people, as unlike the rest of the world as can well be conceived.

Of the three, the most southern was called the Pandyan kingdom, and was the earliest civilized, and seems to have attained sufficient importance about the time of the Christian era to have attracted the special attention of the Greek and Roman geographers. How much earlier it became a state, or had a regular succession of rulers, we know not,[1] but it seems certainly to have attained to some consistency as early as five or six centuries before the Christian era, and maintained

[1] The best account of this state is that given by Professor Wilson in vol. iii. of the Journal R. A. S., but many scattered notices are found in Taylor's Analysis of the Mackenzie MSS. and elsewhere.

itself within its original boundaries, till in the middle of the last century it was swallowed up in our all-devouring aggression.

During this long period the Pandyans had several epochs of great brilliancy and power, followed by long intervening periods of depression and obscurity. The first and fifth or sixth centuries seem to have been those when they especially distinguished themselves. If buildings of these epochs still exist in the country, of which I see no improbability, they are utterly unknown as yet, as well as all those of the intervening periods down to the reign of Trimul Naik, A.D. 1624. This prince adorned the capital city of Madura with many splendid buildings, some of which have been drawn by Daniell and others. What more ancient remains there may be will not be known till the place has been carefully and scientifically explored.

The Chola kingdom extends from the valley of the Cauvery and Coleroon rivers, which seems always to have been their principal seat, nearly to Madras, all along the eastern coast, called after them Cholomandalam or Coromandel. The date of the origin of their kingdom is not known, but their political relations with Cashmere can be traced as early as the fifth century, and probably earlier. Their epoch of greatest glory, however, was between the tenth and twelfth centuries, when they seem to have conquered not only their neighbours the Pandyas and Cheras, but even to have surpassed the bounds of the triarchy, and carried their arms into Ceylon, and even as far north as Ellora, where the great Kylas cave was excavated, either by them or under their influence. After this period they had no great revival like the Pandyas under Trimul Naik, but sank step by step under the Mahometans, Maharattas, and English, to their present state of utter degradation.

The Cheras occupied the country above the Ghâts between Mysore and Madura, and to the west of the Chola country. They seem never to have been so important as either of their neighbours, and certainly never were such temple-builders, their country being singularly bare of important monuments of this class. They were conquered by the Cholas in the tenth century, and never afterwards regained their former power or position—having only shortly recovered their independence to sink again under the rising power of the rajahs of Mysore and Vijanuggur.[1]

Although, politically, these three states always remained distinct, and generally antagonistic, the people belonged to the same race. Their architecture is different from any other, but united in itself, and has gone through a process of gradual change from the earliest times at which we become acquainted with it, until we lose sight of it altogether in the last century. This change is invariably for the worse, the earlier specimens being in all instances the most perfect, and the degree of degradation forming an exact chronometric scale, by which we may measure the age of the buildings. Ascending

[1] For an account of the Chera kingdom see a paper by Mr. Dowson in vol. viii. of the Journal R. A. S.

upwards, we lose the thread of our architectural history just when we come to something so elegant and pure as almost to admit a comparison with some of the better specimens of classic art in more western lands.

The Southern part of India was the scene of protracted disputes between the Buddhist religion and that of the Hindus[1] from the fifth to the seventh century. These contests ended in the persecution and expulsion of the former, though their successors the Jains still flourished at Conjeveram, formerly one of the principal seats of the Buddhists, and in the Mysore. So completely was Buddhism extirpated, that no monument of that religion exists, so far as I know, to the south of the tope of Amravati described above.[2]

The Hindu religion, which thus became supreme, is commonly known by the name of Brahmanical, from the Brahmins or priests belonging to its two great sects. These two sects consist of the worshippers of Siva and of Vishnu, and are quite distinct from one another, and almost antagonistic. Both are now overloaded with a mass of the most monstrous and degrading superstition. The origin of the Sivite and Vishnave sects is unknown to us. We can confidently assert that neither of them was derived from the Indo-Germanic or Sanscrit-speaking races, whose simple monotheism was a pure fire-worship, similar to that of the Persians, and consequently as far removed from the absurdities of the Hindus as can well be conceived.

There are several very remarkable coincidences between the tenets of the Vishnaves and the recent discoveries in Assyria. Garuda, the eagle-headed Vahana, and companion of Vishnu, seems identical with the figure now so familiar to us in Assyrian sculpture, probably representing Ormazd. The fish-god of the Assyrians, Dagon, prefigures the fish Avatar, or incarnation of Vishnu. The man-lion is not more familiar to us in Assyria than in India, and tradition generally points to the West for the other figures scarcely so easily recognised—more especially Bali, whose name alone is an index to his origin; and Maha Assura, who, by a singular inversion, is a man with a bull's head,[3] instead of a bull with a man's head, as he is always figured in his native land. It is worthy of notice, however, that the ninth Avatar of Vishnu is always Buddha himself, and that in the fourteenth century there appears to have been no appreciable difference between the Jains and the Vishnaves;[4] which, with many other facts which it is needless to refer to here, point I think indubitably to a common origin for these three forms of faith—Buddhism being, so far as we know, the oldest derivative from that common source; Jainaism, a less pure modification; and Vishnaism, one suited to the capacities of the present inhabitants of India.

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[1] Many passages in the Mackenzie MSS., deposited at the East India House, refer to these disputes.

[2] See p. 14 and woodcut No. 9.

[3] See Dr. Babington, plate 4, vol. ii., Trans. R. A. S., for the sculpture at Maha Balipuram.

[4] Asiatic Researches, vol. ix. p. 270, and vol. xvii. p. 285.

The Sivite superstition cannot but be regarded as an indigenous form of worship belonging to some of the aboriginal tribes of India, modified no doubt to an immense extent by contact with the foreign forms of faith just alluded to; the whole being now so completely jumbled together as to appear parts of one great system, instead of merely being amalgamations of a vast number of heterogeneous elements, which have been floating about in the unfathomable sea of misguided imaginings of the Hindus during the long dark ages of their intellectual and political degradation.

There does not seem to be any essential difference either in the plans or forms of the Sivite or Vishnave temples in the south of India. It is only by observing the images or emblems worshipped, or by reading the stories represented in the numerous sculptures with which a temple is adorned, that we find out the god to whom it is dedicated. Whoever he may be, the temples consist almost invariably of the four following parts, arranged in various manners, as afterwards to be explained, but differing in themselves only according to the age in which they were executed:—

1. The principal part, the actual temple itself, is called the *Vimana*. It is always square in plan, and surmounted by a pyramidal roof of one or more stories; it contains the cell in which the image of the god or his emblem is placed.

2. The porches or *Mantapas*, which always cover and precede the door leading to the cell.

3. Gate pyramids, *Gopuras*, leading into the quadrangular enclosures which always surround the *Vimanas*.

4. Pillared halls or *Choultries*, used for various purposes, and which are the invariable accompaniments of these temples.

Besides these, a temple always contains tanks or wells for water—to be used either for sacred purposes or the convenience of the priests—dwellings for all the various grades of the priesthood attached to it, and numerous other buildings designed for state or convenience.

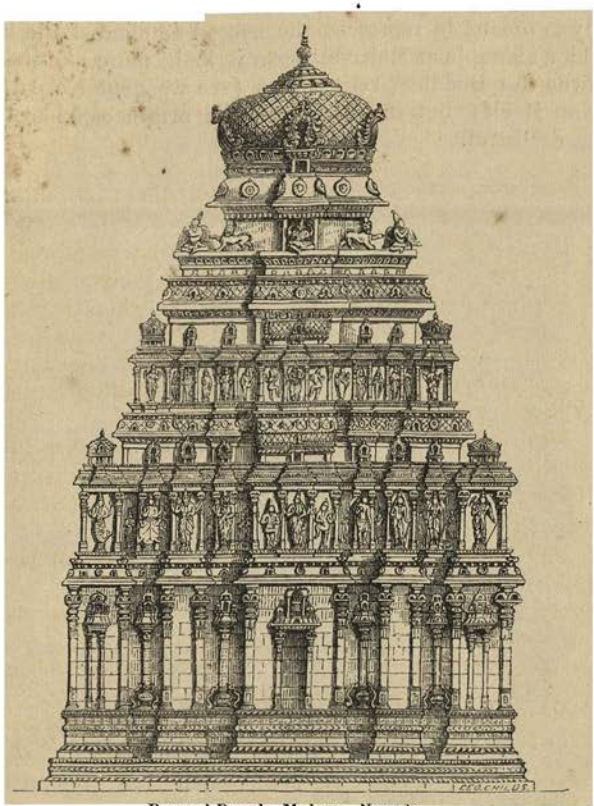
Vimànas.

The *Vimana*, though frequently not the largest, is always the most important part of a Hindu temple, being in fact the sanctuary or temple itself. As before stated, it is always square in plan. In smaller temples the perpendicular part is generally equal in height to its breadth, or, in other words, it forms a cube. In the larger temples its height is very much less than its breadth; but, nevertheless, I believe that the cell which it contains (the *garbha griha*, or womb of the house) is always a cube, or intended to be so; but it is so difficult to gain access to it, that I am by no means certain this is always the case.

The perpendicular part is always of stone, generally of granite, decorated with pilasters, niches, and other ornaments common to this style. The pyramidal roof is generally of brickwork covered with stucco. This in the smallest temples is only one story high, but in

larger ones, such as that at Tanjore (woodcut No. 60), it rises through 14 stories to a height of nearly 200 ft.

The annexed woodcut (No. 57) represents one 3 stories in height



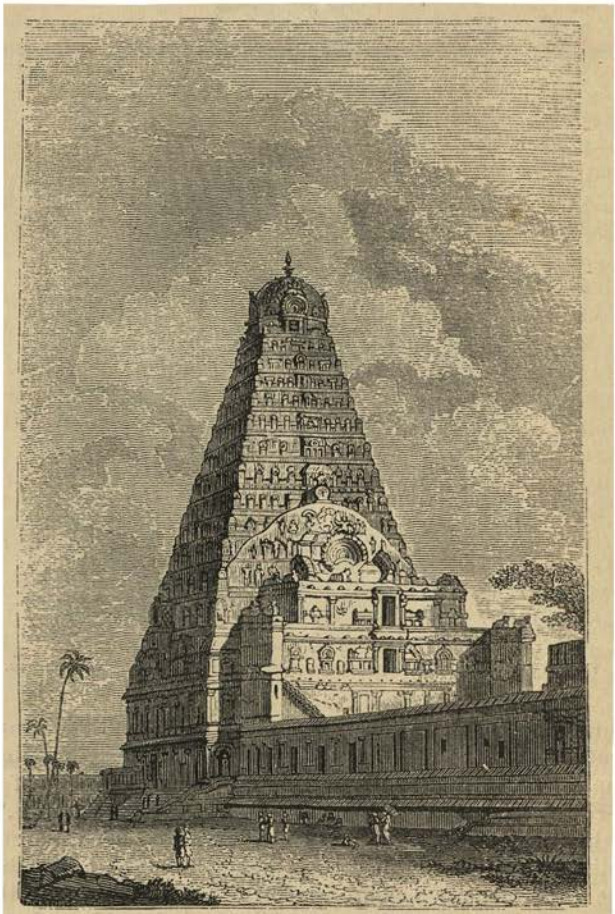
57. Perumal Pagoda, Madura. No scale.
From a MS. drawing in the possession of General Monteith, Madras Engineers.

at Madura, belonging probably to the age of Trimul Naik, and shows all the more interesting peculiarities of the more modern style. There is a complete resemblance between this building and one of the very curious rock-cut temples described above at Mahavellipore.[1] Every part of the one is represented in the other, with such differences only as the difference of age (about 300 years) would lead us to expect. Thus the little cells, which are the principal ornaments of the Mahavellipore temple, have here become niches. It is evident that both are derived from some common source, the later example receding farther from the original.

Both, it will be seen, are covered with a small domelike termination, which is common to all temples in the south, without exception,

[1] See p. 65, woodcut 42.

so far as I know; still in no instance can it be traced to a dome of construction. That it is borrowed from the Buddhist tope will be tolerably evident by referring to woodcut No. 41, where a similar termination covers a Nepalese kosthakar; but in that instance it undoubtedly is meant to represent the sacred emblem of the Buddhists. In the older example at Mahavellipore it looks more like the umbrella that crowns the Buddhist relic-shrine (see woodcut No. 14) than the relic-shrine itself; but in either case its origin can hardly be considered as doubtful.



58. Temple at Tanjore.
From the 'British Museum—Egyptian Antiquities,' vol. i. p. 188.

By far the most splendid temple in India is the great pagoda at Tanjore; its base measures 82 ft. each way, it is two stories in height, and its pyramidal roof rises through 14 stories to a height of 180 or 200 ft. Its age has not yet been satisfactorily ascertained, though its base is covered with inscriptions that would reveal its

history if any one would take the trouble to read them. As far as can be ascertained, it belongs to the great age of the Chola dynasty, probably the tenth or eleventh century; but if so, its upper part must have undergone a very thorough repair at some later date, possibly on its appropriation to Sivaism; for, as its gateways are decidedly Vishnave, the temple was probably so also when first built, but like many others in India given over to the more popular faith at some subsequent period. At all events it is the finest temple in the south, being almost the only one in which the *vimana* or temple is the principal object, round which the subordinate ones are grouped in such a manner as to make a great and consistent whole. Generally speaking, they have been aggregated together as if by accident, and the principal object is so overpowered by the secondary ones as utterly to destroy all appearance of design.

In most instances the light is admitted to the cell only by its doorway; but as if this were not sufficient to ensure the obscurity which they covet so much, as enhancing the mystery of the sanctuary, it is generally covered by an ante-temple, or pronaos—here called *Anterala*—generally about half as deep as it is broad, its breadth being the same as that of the cell.

PORCHES, OR MANTAPAS.

Beyond this is a porch, or *Mantapa*, which is usually a square building, in plan nearly identical with the temple itself, and having a door on each of its four sides, one leading to the cell of the temple, the other three admitting light and access to its interior. Its roof is generally pyramidal, but very much lower than that of the temple itself; but often it is flat, and devoid of any crowning ornament.

To this another porch sometimes succeeds; and when this is the case, the inner one is distinguished as the Ardha Mantapa, the outer as the Maha Mantapa. When joined together the outer is generally open in front and closed only on the sides, so that it does not materially obstruct the passage of light to the interior. Sometimes it is detached, and then takes any form that fancy may dictate.

The roof of these porches, when large, is supported with pillars; but the Hindu architects never willingly resort to this expedient, generally reducing the bearing as far as possible by bracketing and projecting cornices, and then aiding the long stones that form the ceiling by beams of wood, or even of iron, laid under them, so as to gain the requisite strength by any contrivance rather than by pillars. Many of the finest temples of India owe their ruin to this strange peculiarity in a people who in other instances were lavish of columnar arrangements to an extent unknown in any other part of the world.

GATE PYRAMIDS, OR GOPURAS.

The cell and its porch together form the temple, properly so called; but in all instances they were enclosed—or at least it was intended they should be so—in a rectangular court. The walls of this court

are high, and plain externally, but internally ornamented by colonnades and cloisters, or buildings of various sorts adapted to the service of the temple. This gave rise to the Gate Pyramids, which form the entrances to these courts.

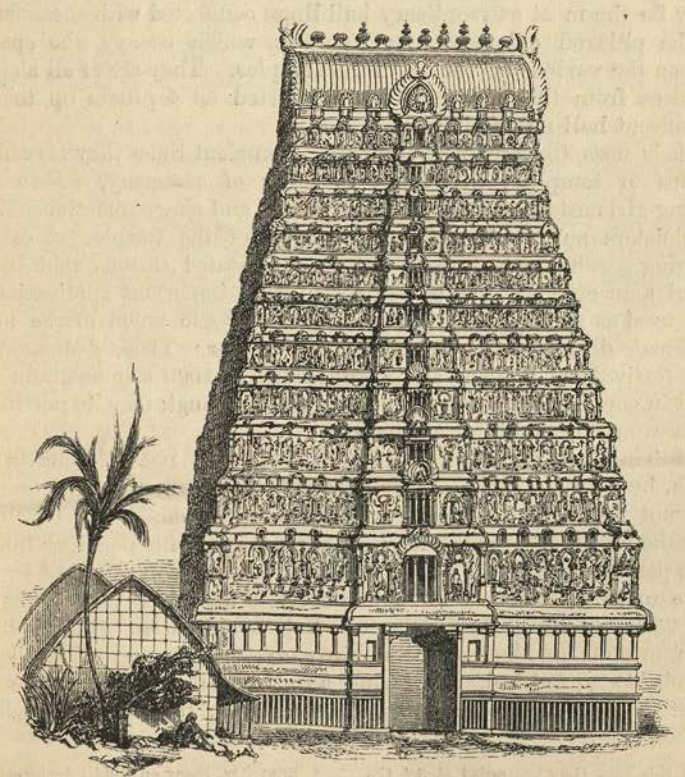
When only one wall surrounded the temple, only one gateway was used, directly facing the porch. Where a second enclosure surrounded the first, the outer wall had usually two gateways, one in front of that of the inner wall, the other exactly opposite behind the temple; with 3 enclosures, 4 gopuras were required for the outer enclosure, one in the centre of each face. So that a temple, such as that at Seringham, with 7 enclosures, ought to have 23 gopuras; the number however is seldom complete, Seringham having, I believe, only 17, and no other that I am acquainted with so many.

Another curious practice is, that the gateway is made to bear some proportion to the length of the wall in which it is placed. Thus at Seringham, the inner enclosure being 200 or 300 ft. square, the gate pyramid is only 40 or 50 ft. broad, and the passage through it 10 or 12 ft. wide, and 18 or 20 ft. high; while the outer ones, standing in walls 2475 and 2880 ft. in extent, are 130 ft. wide by 100 ft. deep, the opening 21 ft. 6 in. wide by twice that in height. The jambs are formed of single blocks of granite at least 40 ft. in length, and the whole is roofed by slabs of granite not less than 23 or 24 ft. long. These gateways, though not older than the beginning of the last century, are among the most stupendous buildings of the south of India. This arrangement gives rise to a singular piece of architectural bathos. The original small cell in this, as in many other instances, has become sacred from some mystical cause or other; and instead of either rebuilding it on a larger scale, or building over it, as the Buddhists would have done, the Hindu architect has merely regilt and re-ornamented it. Next another and another enclosure with its gate-towers has been added, so that there is no central object of attraction. Viewed externally, the temple is a congeries of gate pyramids without object, and on entering you pass from the most magnificent structures to those which are less and less so, till at last you arrive at the meanest thing of all, the sanctum sanctorum of the whole temple. To a Hindu its sanctity may hide all its defects; but the architect has certainly failed to work up to the greatness of his subject. Tanjore is one of the few temples in the south which escape this fault, so destructive of architectural grandeur.

The form of the Gopuras is easily understood, as it is identical with that of the Vimanas, except that, instead of being always square, they are always larger in one direction than the other, and their longer side is pierced with an opening occupying from one-fourth to one-seventh of the whole width. This oblong shape also necessitates the abandonment of the circular crowning ornament, which is lengthened out to correspond with the general section of the building.

This, like the form of the temples, is explicable by a reference to Buddhist buildings. The large long building, for instance, in woodcut No. 42, which almost undoubtedly represents the exterior of a

59. Entrance to a Hindu Temple, Colombo. From Sir J. E. Tennent's 'Ceylon.'



60. Gopura, Combaconum. From a Sketch by the Author.

Buddhist *Chaitya hall*, if pierced with an opening in the side instead of at the end, would form a *Gopura;* and the Hindus, when building in a Buddhist country, still adhere to this form more closely than in their own territories, as may be seen by the woodcut No. 59, representing the gateway of a temple in Ceylon, still retaining the simple form almost lost in the complication to which their gateways have been subjected in modern times.

One of the tallest gate pyramids I know of is that belonging to the principal temple at Combaconum (woodcut No. 60), which became the capital of the Chola after the temporary abandonment of Tanjore. It rises to 12 stories, including the basement, which is of granite and plain, while the whole of the pyramid is of brick stuccoed, and covered with sculpture and architectural ornaments to an extent undreamt of by European imagination. Its want of proportion, and the endless repetition of small parts, prevent its being so pleasing an architectural object as the smaller gate pyramids generally are, though it is certainly imposing from its mass.

Pillared Halls.

By far the most extraordinary buildings connected with these fanes are the pillared colonnades or *choultries* which occupy the spaces between the various enclosures of the temples. They are of all shapes and sizes, from the little pavilion supported on 4 pillars up to the magnificent hall numbering a thousand.

Their uses too are most various: in ancient times they served as porches to temples; sometimes as halls of ceremony, where the dancing-girls attached to the temples dance and sing; sometimes they are cloisters surrounding the whole area of the temple, at others swinging porches, where the gods enjoy at stated seasons that intellectual amusement. But by far their most important application is when used as nuptial halls,[1] in which the mystic union of the male and female divinities is celebrated once a year. Those dedicated to these festivals sometimes attain an extent of 1000 columns, and are called in consequence halls of 1000 columns, though they do not in all instances make up this complement.

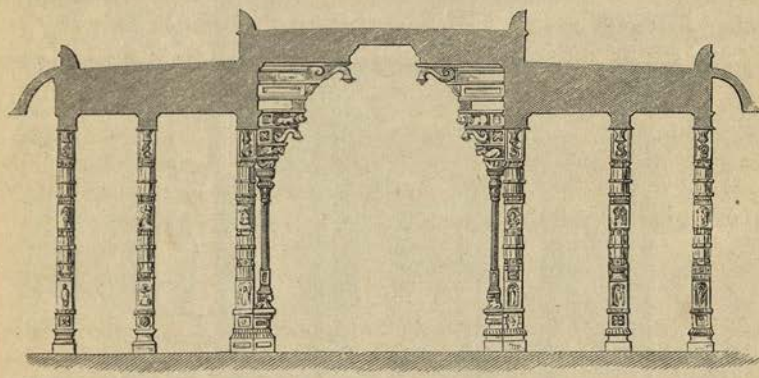
At Tinnevelly the great pillared hall has 100 columns in its length, by 10 in width, so that it would have exactly that number were not 24 omitted to make way for a small temple. At Chillumbrum the hall is 24 pillars wide by 41 in length, which, adding the 16 of the porch, would make up the number; but some are omitted in the centre to admit of space for ceremonies, so that the actual number is only 930. At Tiruvalur[2] the great hall is 16 pillars wide by 43 in depth, or 688; one-half of them, however, support no roof, so that it is probably unfinished. At Seringham the hall is of about the same extent; and several other temples have halls, the number of whose

[1] In this case they are called *chaöri*, the same word, I believe, radically, as *choultry*.

[2] Ram Raz, Essay on Hindu Architecture, plate xlviii.

pillars varies from 600 to 1000; in almost every instance composed of a hard close-grained granite, covered with sculpture from the base to the capital, and in most instances no two pillars are exactly alike. There is thus an endless and bewildering variety in the detail, though the general dimensions and effect are the same.

The construction of these choultries will be best understood from the annexed section of one used as a porch to a small temple at Chillumbrum; as will be seen, it is a five-aisled porch, supported by six

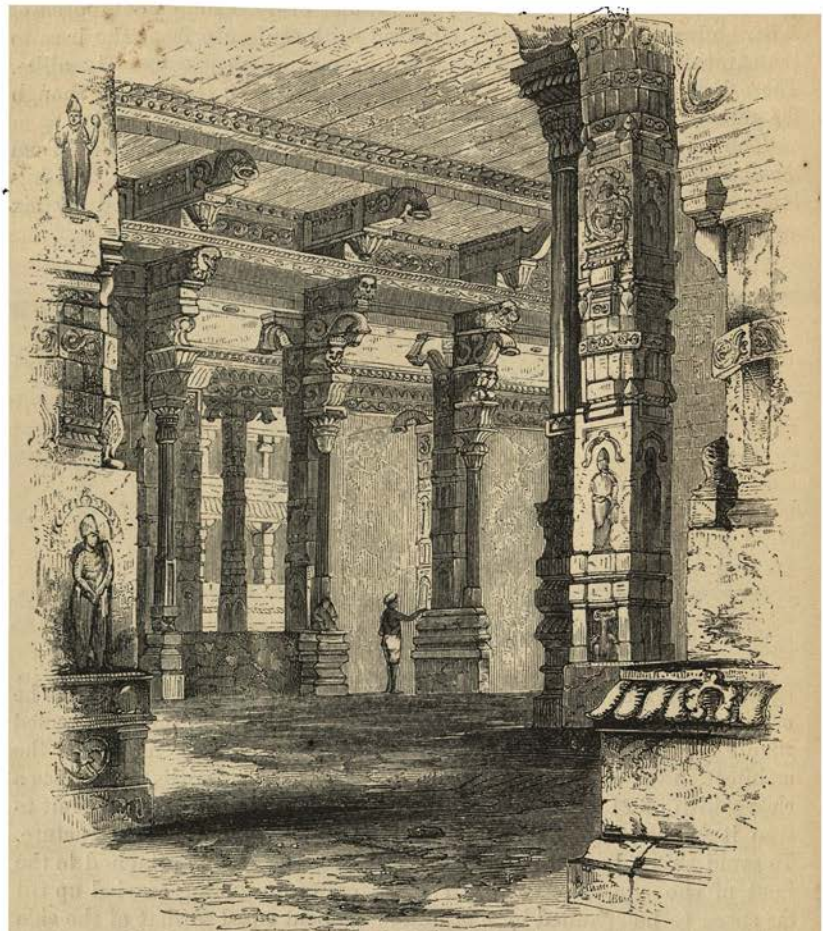


61. Section of Porch of Temple at Chillumbrum. From a Sketch by the Author. No scale.

square columns, about 18 in. each way and 20 ft. in height. The outer aisles are only 6 ft. in width, the inner 8 ft., and they are roofed simply by flat stones laid side by side. The whole energy of the architect, however, has been reserved for the central aisle, which has a clear width of 21 ft. 6 in.; a space so wide that it would be difficult to span it without using stones so heavy as to crush the substructure. To avoid this a bracketing shaft of singular elegance is attached to the front of the square pillar, and a system of bracketing carried up till the space to be spanned by flat stones is about equal to that of the side aisles, or in other words the space between the pillars is divided into three equal portions of about 8 ft. each, the side portion borne on the brackets, and the central space only remaining to be roofed. Lest, however, there should be a tendency to lateral weakness in so extensive a bracket, about half-way up it a stay[1] is introduced, in the form of a slight stone beam extending from one to the other, which certainly adds extremely to the elegance, and also probably to the strength of the structure.

The general effect of the arrangements of this porch will be seen from the woodcut No. 62, though it cannot do justice to its singular elegance and grace. This is the oldest example I have seen of the arrangement, dating probably from the tenth century, and therefore the most elegant. The more modern examples, though richer, have lost much

[1] Shown more clearly in the woodcut No. 62.

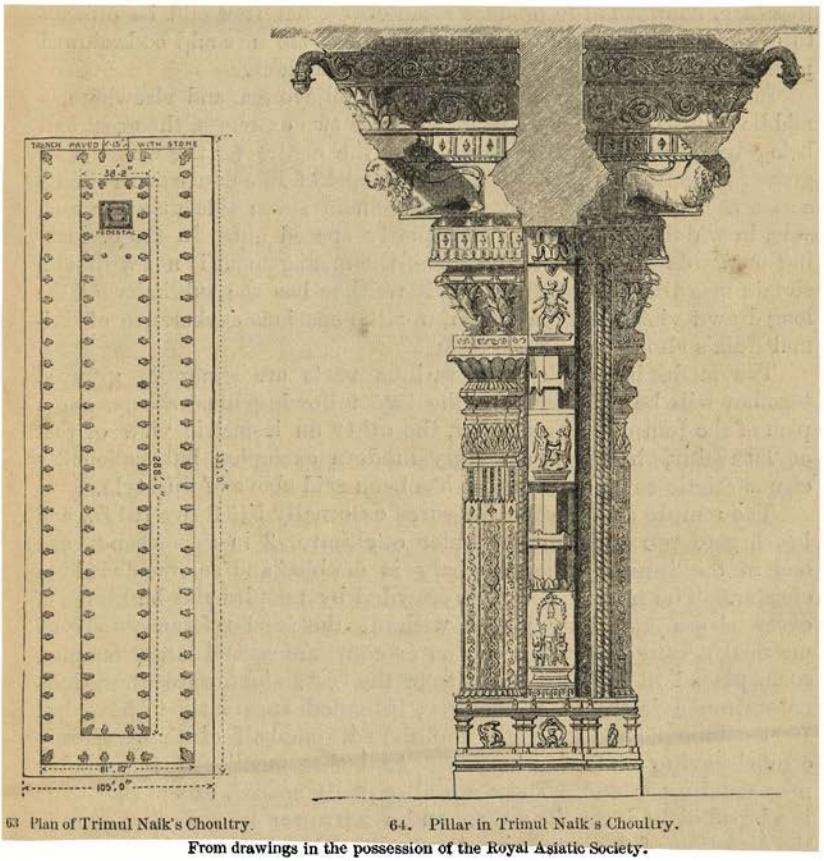


62. View of Porch at Chillumbrum. From Drawings by the Author.

of the beauty, and nearly all the constructive propriety and grace, which we find in this. One of the most remarkable of these is the hall built by Trimul Naik at Madura, and tolerably well known to the English public from Daniell's illustration of it. It was commenced in 1623, is said to have cost nearly a million sterling, and occupied twenty-two years in its erection.[1] As will be seen by the annexed plan (woodcut No. 63), the building is 333 ft. long by 81 ft. 10 in. wide, and is supported by 128 pillars or piers, all of which differ, and all are covered with the most elaborate and minute architectural ornaments—many having figures attached to the fronts of them, as well as groups on their sides. In this instance the bracketing shaft has

[1] J. R. A. S., vol. iii. p. 232.

merged into the pillar; the whole becomes a pier from 5 ft. to 6 ft. in width, with scarcely a reminiscence of the original arrangement from which it sprang. The accompanying elevation of one of these (woodcut No. 64) will show the form which the piers took about this time, and which is common to them all, after this date, though not found before. The object in building this magnificent choultry was to provide a suitable abode for the god, who consented to leave his temple for ten days every year, and visit the king, on condition of his providing a suitable building for his reception.



63 Plan of Trimul Naik's Choultry. 64. Pillar in Trimul Naik's Choultry.

From drawings in the possession of the Royal Asiatic Society.

Between these two arrangements—the more modern, where the square pillars merge into flat piers, and the older one, in which the square shape is never lost sight of—come the pillared halls of the celebrated temple of Ramisseram on an island between Ceylon and the mainland. These are 5-aisled choultries, and encircle the temple twice, and with their various junctions extend to near 4000 ft. in length, with every variety of light and shade and complexity of form

and effect, making up one of the most vast and elaborate of all the temples in the south of India.[1]

Where the subordination of parts is preserved, the general effect of these choultries is pleasing, and, from their vastness, sometimes almost reaches to sublimity. But in the more modern times this quality is neglected, and, as at Tinnevelly and Chillumbrum, both of which were erected during the last century, the choultries are mere collections each of 1000 columns, placed at equal distances, generally no more than 6 ft. apart, without any variety or harmony of arrangement whatever. Such a forest of pillars, carved and elaborated as these are, cannot fail to produce some effect, but it would be difficult to conceive any design on which so much labour could be bestowed productive of so little of either beauty or grandeur.

In other instances, as at Seringham, Conjeveram, and elsewhere, a middle course is followed between these two extremes, the great hall being traversed by one wide aisle in the centre for the whole of its greater length, and intersected by transepts of like dimension running across at right angles. There still remain seven side-aisles on each side, in which all the pillars are equally spaced out. In these, looking outwards from the centre aisle, the arrangement is not without a certain magnificence of effect, but it neither has the sublimity of the long-drawn vistas of Ramisseram, nor the spacious exuberance of Trimul Naik's choultry at Madura.

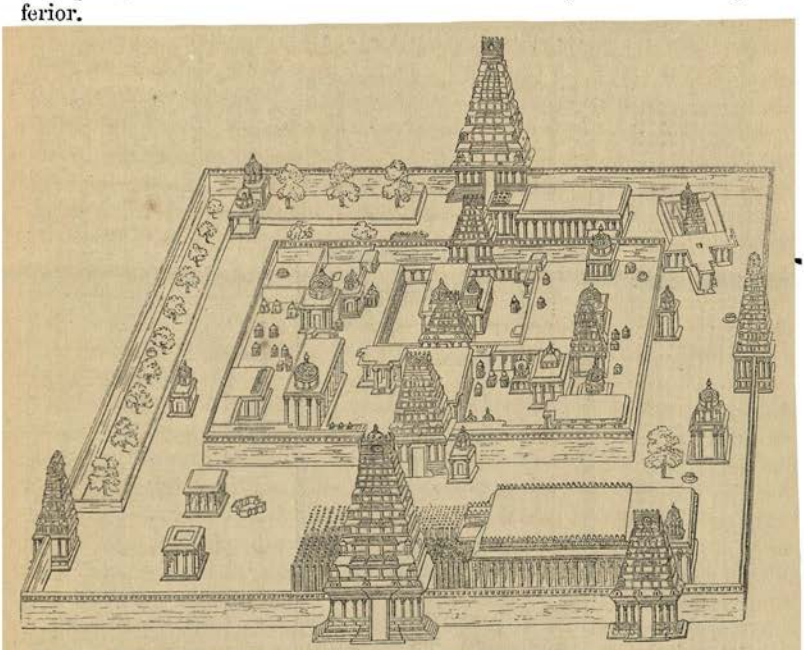
The mode in which those various parts are generally grouped together will be understood by the two following illustrations, one a plan of the temple at Tinnevelly, the other an isometric view of that at Tiruvalur, both comparatively modern examples, but sufficiently characteristic to explain all that has been said above of the style.

The temple at Tiruvalur measures externally 945 ft. by 701 ft., and has 5 gate pyramids in its outer enclosure, 2 in the second, and one in the inner. The sanctuary is double, and surrounded by a cloister. The next enclosure is crowded by temples and buildings of every shape and size, placed without the least reference to symmetrical arrangement. In the outer court are several larger temples, some placed at different angles from the rest; and towards the principal entrance is the great choultry, intended apparently to have had 1000 columns, but evidently unfinished, one-half of those already erected having no roof to support. As before mentioned, the number now standing is 688. These are all equally spaced, except that there is a broad aisle down the centre, and a narrower transverse avenue in the direction of the entrance. Hence it will easily be understood how inferior, as an architectural design, this is to such an arrangement as that of the 420 columns of the temple at Sadree,[2] or indeed of any Jaina building, however small. Their uniformly flat roofs prevent even the older choultries from reaching the beauty of these domical

[1] A plan of this temple is given in the Journal of the Geographical Society of Bombay, vol. vii. Salt published a view of its gopura, and in the India House are MS. views of its interior.

[2] See p. 79, woodcuts 54 and 55.

examples; while the modern ones are certainly immeasurably inferior.

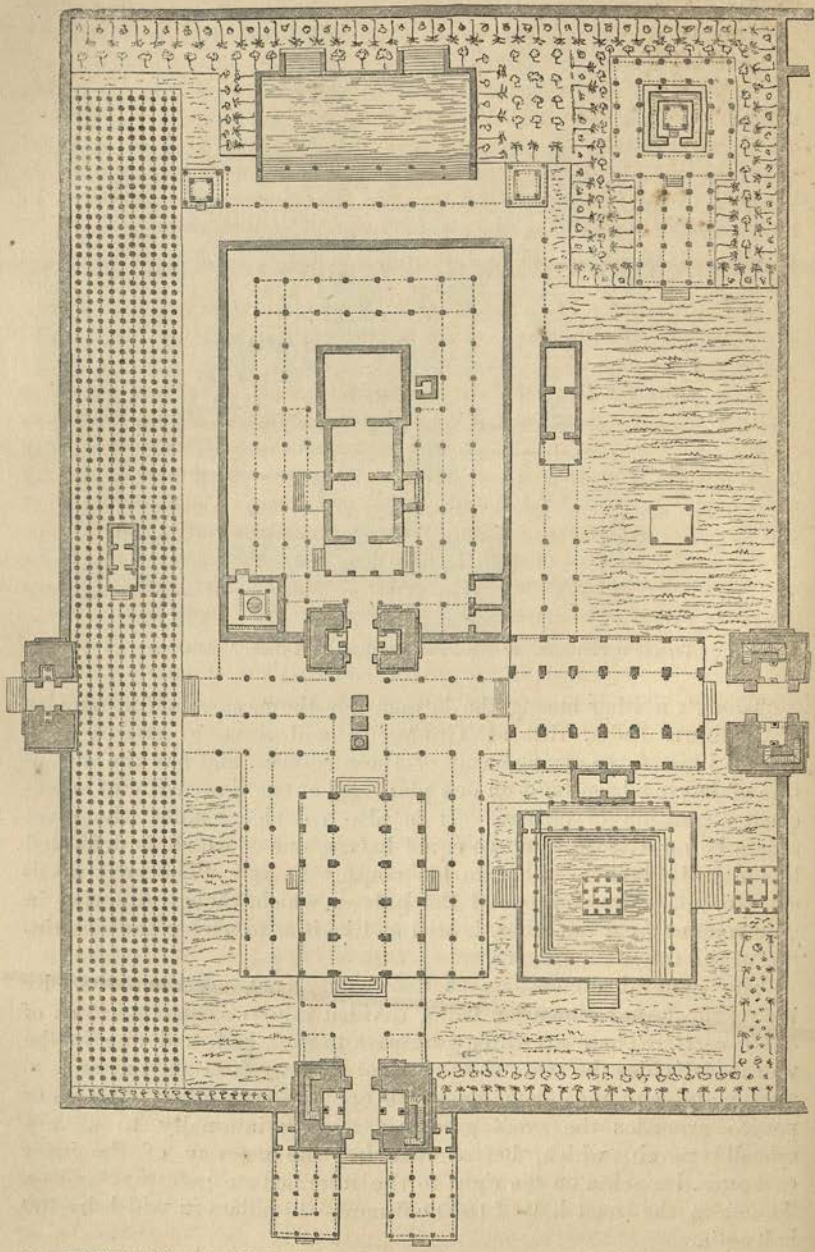


65. Temple at Tiruvalur. From a drawing in Ram Raz's Hindu Architecture.

Though neither among the largest nor the most splendid temples of Southern India, that at Tinnevelly will serve to give a good general idea of the arrangement of these edifices, and has the advantage of having been built on one plan, and at one time, without subsequent alteration or change. It is also a double temple, the great square being divided into two equal halves, one of which is dedicated to the god Siva, the other to his consort Parvati. The next woodcut, No. 66, represents one of the halves, which, though differing in arrangement from the other, is still so like it as to render the description of the other superfluous.

The general dimensions of the whole enclosure are 580 ft. by 756 ft., the larger dimension being divided into two equal portions of 378 ft. each. There are three gateways to each half, and one in the wall that divides the two; the principal gateway faces the entrance to the temple, and the lateral ones are opposite each other. An outer portico precedes the great gateway, leading internally to a very splendid porch, which, before reaching the gateway of the inner enclosure, branches on the right to the intermediate gateway, and on the left to the great hall of 1000 columns—10 pillars in width by 100 in length.

The inner enclosure is not concentric with the outer, and, as usual, has only one gateway. The temple itself consists of a cubical cell, surmounted by a vimana or spire, preceded by two porches, and is sur-



66. Half Plan of Temple at Tinnevelly. From a plan in the possession of the Royal Asiatic Society. Scale 100 ft. to 1 in.

rounded by triple colonnades. In other parts of the enclosure are smaller temples, tanks of water, gardens, colonnades, &c., but neither so numerous nor so various as are generally found in Indian temples of the class.

These temples have often been compared with those of Egypt, particularly that of Carnac. Undoubtedly there are many very striking points of resemblance. The *gopura* both in form and purpose is by no means unlike the great *propylon* of Egyptian temples: the *mantapa* is analogous to the *hypostyle* hall: and the inner enclosures, small cells, and insignificant central objects correspond very closely. We know also that there was considerable commercial intercourse between the two countries at a very ancient time. But on the other hand the two styles differ so widely in details and in purpose that we cannot positively assert the actual connection between them, which at first sight seems unquestionable.

A far more striking similarity exists between such a temple as this and that at Jerusalem; and if Josephus's description of that temple as rebuilt by Herod be read with such a plan as this of Tinnevelly before us, it is difficult to escape the conviction that the coincidences are not wholly accidental. That temple must, of course, be squared as these usually are, and the dimensions then become nearly the same. The great *choultry* is then the Stoa Basilica, the outer court that of the Gentiles. No separation of the sexes being known in the Eastern temples, the women's court is omitted; but the inner enclosure, the form of the temple, its gateway, its pillars, and other peculiarities are so like in both that we can scarcely doubt their being derived from some common origin. We probably have no means of tracing what that common origin may have been.

KYLAS AT ELLORA.

One of the most interesting monuments of Hindu architecture is the rock-cut temple at Ellora, generally known as the Kylas. From its beauty it always excited the astonishment of travellers, and in consequence is better known than almost any other structure in that country, from the numerous views and sketches that have been published of it. Unlike the Buddhist excavations we have hitherto been describing, it is not a mere interior chamber cut in the rock, but is a model of a complete temple, such as might have been erected on the plain. In other words, the rock has been cut away, externally as well as internally. The older caves are of a much more natural and rational design than this temple, because, in cutting away the rock around it to provide an exterior, the whole has necessarily been placed in a pit. In the cognate temples at Mahavellipore (illustrated woodcut No. 42) this dilemma has been escaped by their carvers having found the boulders of granite out of which they are hewn lying free on the shore; but at Ellora, no insulated rock being available, a pit was dug in the sloping side of a hill, about 100 ft. deep at its inmost side, and half that height at the entrance or gopura, the floor of the pit being

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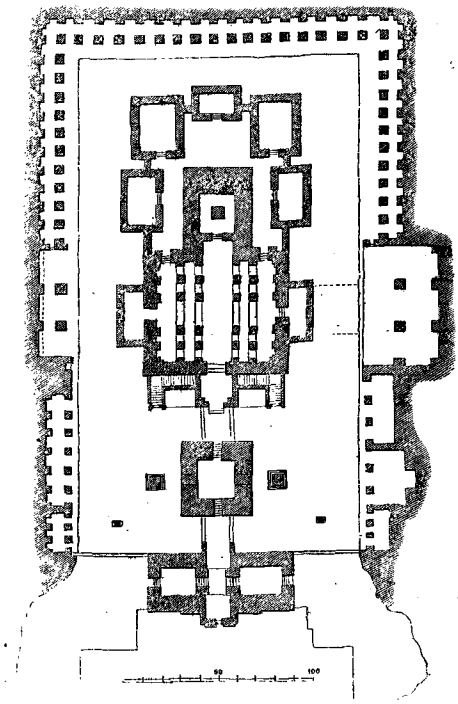
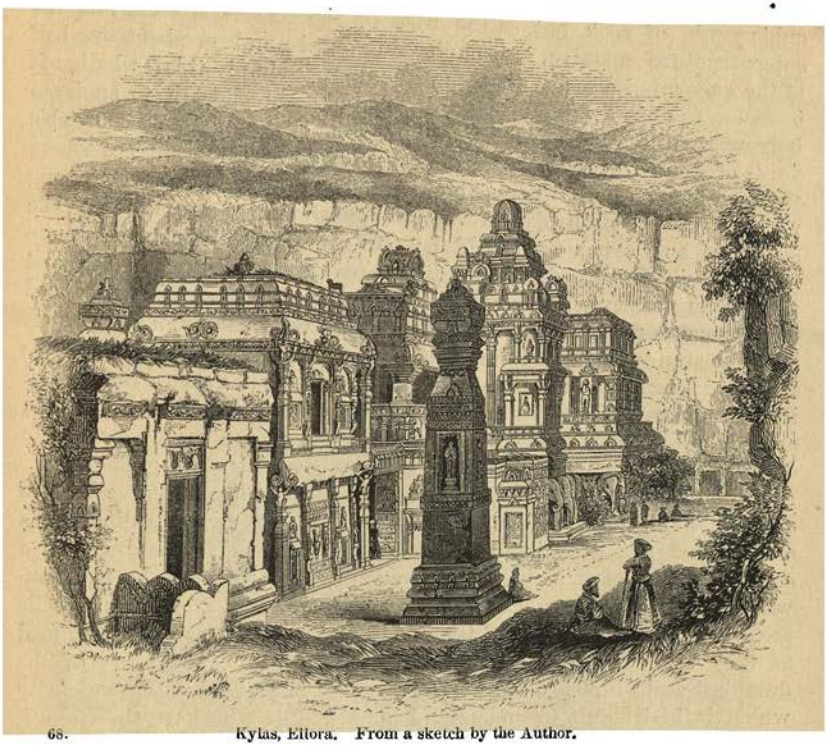
150 ft. wide and 270 ft. in length. In the centre of this rectangular court stands the temple, as shown in the annexed plan (woodcut 67), drawn to the usual scale, consisting of a vimana, between 80 ft. and 90 ft. in height, preceded by a large square porch, supported by 16 columns (owing probably to the immense weight to be borne); before this stands a detached porch, reached by a bridge; and in front of all stands the gateway, which is in like manner connected with the last porch by a bridge, the whole being cut out of the native rock. Besides these there are two pillars or sthambas also left standing on each side of the detached porch, and two elephants about the size of life. All round the court there is a peristylar cloister with cells, and some halls not shown in the plan, which give to the whole a complexity, and at the same time a completeness, which never fail to strike the beholder with astonishment and awe.



67. Kylas at Ellora. Corrected from a plan in Daniell's Views in Hindostan.

As will be seen by the annexed view, its general form is extremely similar to that of the principal temple at Mahavellipore (woodcut 42), and also to that at Tanjore (woodcut 58); and although it is not easy to make this apparent on the small scale of the woodcuts, I can assert, from personal inspection of the three examples, that they are identical as far as style is concerned. Some allowance, of course, must be made for the difference of age, the Kylas belonging to the ninth or tenth, the Mahavellipore Raths to either the twelfth or thirteenth centuries, and the Tanjore temple, though probably intermediate between the two, having, as before stated, been altered at some subsequent period to its present form. That they belong to the same race and the same religion seems undoubted; and they are, as will presently be shown, so unlike anything further north, that there can be little doubt that it is to an overflowing of the Tamul races that we owe the Kylas, and probably also the introduction of the Sivite religion into the countries occupied by the Arian races.

As the oldest of the three buildings, the Kylas presents an interesting peculiarity which we might expect, but do not find elsewhere,



68. Kylas, Ellora. From a sketch by the Author.

which is, that the cells surrounding the vimana are detached, five of them opening in a little court-yard in which the vimana stands, each with a separate entrance of its own, and destined for its own peculiar image or object of worship. The fourth side of this court is occupied by the porch. At Mahavellipore the cells may be called semi-detached, each being distinct, though in reality they are only false cells. In the Perumal pagoda (woodcut 57) they have grown to be actually parts of the vimana, and so they are always treated at the present day. It is interesting to trace the process from the detached cell of the Buddhists as found in Java to their present descendants, which, without the intermediate steps, we could scarcely recognise.

Considerable misconception exists on the subject of cutting temples in the rock. Almost every one who sees these temples is struck with the apparently prodigious amount of labour bestowed on their excavation, and there is no doubt that their monolithic character is the principal source of the awe and wonder with which they have been regarded, and that, had the Kylas been an edifice of masonry situated on the plain, it would scarcely have attracted the attention of European travellers at all. In reality, however, it is considerably easier and less expensive to excavate a temple than to build one. Take, for instance, the Kylas, the most wonderful of all this class. To excavate the area on which it stands would require the removal of about 100,000

cubic yards of rock, but, as the base of the temple is solid and the superstructure massive, it occupies in round numbers about one half of the excavated area, so that the question is simply this—whether it is easier to chip away 50,000 yards of rock, and shoot it to spoil (to borrow a railway term) down a hill-side, or to quarry 50,000 cubic yards of stone, remove it, probably, a mile at least to the place where the temple is to be built, and then to raise and set it. The excavating process would probably cost about one-tenth of the other. The sculpture and ornament would be the same in both instances, more especially in India, where buildings are always set up in block, and the carving executed in situ. Nevertheless the impression produced on all spectators by these monolithic masses, their unalterable character, and appearance of eternal durability, point to the process as one meriting more attention than it has hitherto received in modern times; and if any rock were found as uniform and as easily worked as the Indian amygdaloidal traps, we might hand down to posterity some more durable monument than many we are now erecting at far greater cost.

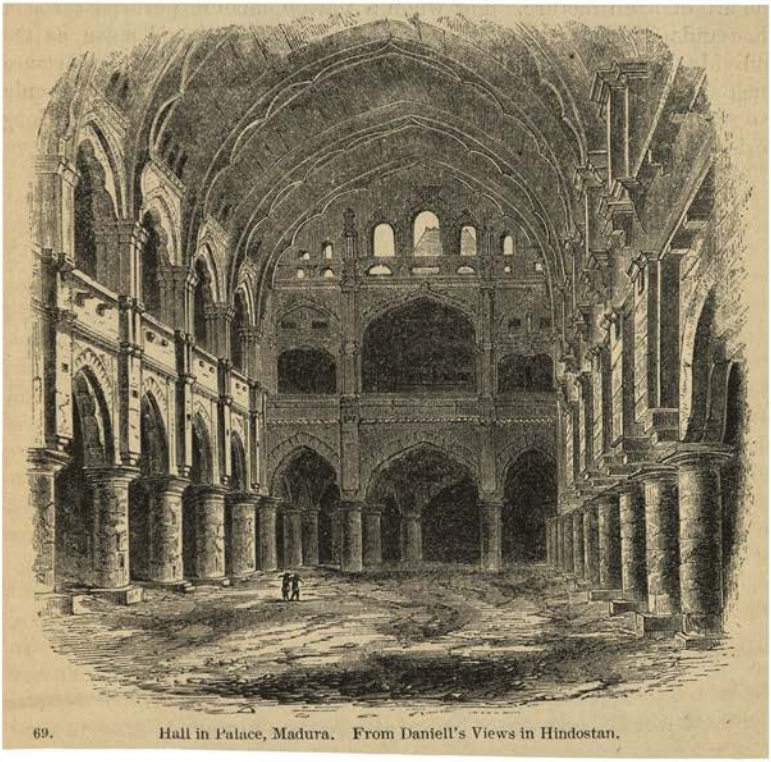
Before leaving the subject of southern temples, I must allude to another at Tanjore, which, at a distance, almost rivals in dimensions and outline the great pagoda (woodcut 58), of which it is evidently a copy. On a nearer inspection, however, it is found to be made up wholly of Italian details of the very worst class. The external cells are ornamented with Corinthian and Ionic pilasters, as badly designed as they are executed, alternating with ranges of balusters of the dumpiest and clumsiest forms. The whole is painted with a vulgarity which it is difficult to understand in a people who have shown such taste in earlier times, and so exquisite an eye for colour and detail. Such, however, are the effects of the miserable state of dependence to which they have been reduced, and such the results of an attempt to copy servilely a style utterly unsuited to their wants, and which they can neither understand nor appreciate. It is amusing to see another people trying this copying system. We see with half a glance how ludicrous the failure is with them; but while we so easily detect their speck, we utterly forget the beam that closes our own eyes.

Nevertheless, before the Hindus fell so low as this, their art went through another stage, not unproductive of beauty and elegance, and which might eventually have been elaborated into a style even surpassing their own more ancient forms. This new style is found in the buildings erected under the influence of the Mahometans, and adopts, to a certain extent, some of the more prominent forms of their architecture.

When the Mahometans first conquered India they imitated in their earlier mosques not only the details, but even the forms, of the Hindu architects, and their style in that country always bore strongly the impress of the land in which it was elaborated, still retaining its arched form, and a more daring construction than the Hindus had ever attempted. In process of time a complete reaction took place, and in their secular buildings at least, though scarcely ever in their temples, the Hindus began to adopt the arcades and vaults of their antagonists,

using them, however, in their own peculiar fashion, and making what may be called an amalgamation of two styles, rather than a mere copy of the other. Even if they had copied from the Mahometans, it would have been a very different thing from borrowing from another age or another clime that which had become antiquated, or was unsuitable. It was merely the adoption by one part of the inhabitants of a country of those forms which another and more energetic portion of its inhabitants had found best suited for their purposes.

In the south of India one of the most pleasing specimens of this style is a portion of the palace of Madura, commenced by Trimul Naik, and completed by his successors, now utterly fallen to ruin and decay. The part most illustrative of the new style is the great Hall of Audience, shown in the annexed woodcut; but other parts and other



69. Hall in Palace, Madura. From Daniell's Views in Hindostan.

halls show the same characteristics with more or less distinctness. It is not known by whom this hall was erected; at first sight it might be supposed improbable that the builder of the choultry illustrated above (woodcuts 63, 64) could adopt so different a style in his palace. Innovation, however, in secular affairs, is a totally different thing from novelty in things sacred, in India, as well as elsewhere; and the consequence is, that the change never reached the temples, though it was common in palaces in the seventeenth and eighteenth centuries.

I should be inclined to date the hall rather from the beginning of the eighteenth than in the seventeenth century; but without seeing it, it is hazardous to venture even a conjecture on such a subject.

To these points I shall have occasion to revert hereafter, when speaking of the styles of the north. In the mean while our limits warn us to take leave of a style well deserving of more attention than has hitherto been bestowed upon it. Its historic interest is very great: the buildings to which it gave rise are remarkable for their extent and number. It exhibits also great beauty of detail, especially in the older instances. The grandeur of some of its forms, and the general purpose-like attainment of the ends aimed at, give rise to effects as pleasing as they are startling, and afford hints well worthy of the study of any of those who wish to master the theory or practice of the art of architecture. For when a nation labours perhaps through thousands of years to attain a given object, small and mean as the individual efforts may be, the accumulated results attain importance such as no individual capacity ever could realize, and such as can only be reached by the united efforts of millions exerted through a long series of ages.

CHAPTER II.

NORTHERN HINDU STYLES.

CONTENTS.

Cuttack Temples — Temples in Upper India — Modern Temples at Bindrabun and Benares — Mixed Hindu style — Tombs — Palaces — Ghâts — Bunds — Wells, &c.

CHRONOLOGY.

	DATES.		DATES.
Invasion of Cuttack by strangers coming by sea	A.D. 218	Raja Nursing Deo builds Black Pagoda at Kanaruc	A.D. 1236
Lelat Indra Kesari builds temple at Bobaneswar	657	Maun Sing builds temple at Bindrabun	1592
Ananga Bhim Deo builds temple at Juggernath	1174	Amera Sing rebuilds Oudipore	1596
Indra-dyumna cuts caves at Ellora	1176	Jaya Sing builds Jeypore	1698
		Sooraj Mull builds palace at Deeg	1750

FROM the earliest age at which tradition first sheds even the dimmest light on Indian history to the present hour, the valley of the Ganges has always been the richest and most populous part of the country. Here the first strangers settled, bringing with them the civilization of the West; here that civilization was elaborated into those peculiar institutions that still so strongly subsist after the lapse of thousands of years. It was in this valley that those heroes lived whose exploits are celebrated by the Indian epic and dramatic poets, whose works are now becoming familiar to us; and here it was that the religions of Buddha and Brahma arose, which still influence at least a fourth of the whole human race. Here, therefore, we naturally look for monuments to illustrate the manners and customs of those bygone ages; but we look in vain. It has been already said[1] that there are no certain traces of ancient Hindu architecture, that is to say, of anything previous to the spread of Buddhism. In Northern India, with the few exceptions to be shortly noticed, there are no genuine Hindu buildings at all earlier than the time of the Mahometan conquest.

We might be inclined to attribute this to the idol fanes of the vanquished race having been destroyed by the religious zeal of the conquerors. But this explanation is inconsistent with the fact that several Buddhist monuments remain in this very district, and many of the Jains, converted for the most part into mosques, though perfectly easy to be recognised. The phenomenon, therefore, can only be

[1] See p. 5.

accounted for by the assumption, confirmed as it is by other evidence, that the Arian race, which prevailed in this part of India from a very early period, was not in the habit of building temples or durable edifices of any kind.

It is only in the remote province of Orissa, or in the jungles of Rajpootana, that any examples are found of early Hindu buildings. Orissa, being on the boundary of the Tamul races, and as little influenced by Arian prejudices as can well be conceived, is covered with temples, some of which are of great magnificence; and though the province is remote, and always was comparatively poor, it possesses now more temples than the whole of the rest of Bengal. In Rajpootana, which, if tradition may be trusted, was far more influenced by the Huns—within at least the temple-building age—than by the Arian race, we find the same phenomenon. The little hill-fort, for instance, of Chittore has its brow garnished with more temples, and more architectural magnificence, than any of the great capital cities that once adorned the fertile plains watered by the sacred stream of the Ganges.

Orissan Temples.

So remote is the province of Orissa, that it is with the greatest difficulty we can glean even such scanty notices of its history as are usually available in Eastern countries. We know, however, from the inscription at Dauli, that Asoka sent hither his missionaries and published his edicts here; and it is evident from the caves on the Udyagiri that Buddhism did exist here from that period till some time after the Christian era. We know also that the famous Tooth-relic was preserved in this province up to the beginning of the fourth century, in a temple which stood where the far-famed temple of Juggernath now stands,[1] whose worship seems to be only a corrupt Buddhism, so overlaid with local Fetichism as scarcely to be recognisable.

It seems very doubtful whether, in the beginning of the fourth century, the kings of Orissa were Buddhist or Brahmanical—they wavered apparently between the two.[2] About that time the succession was disturbed by an invasion [3] of barbarians, who retained the country for 146 years. After this the original family, or at least the original race, regained power, and it is with them that our architectural history commences.

The earliest authentic building that we have of this race, or indeed of the Hindu religion in Hindostan, is the great temple of Bobaneswar, built by Lelat Indra Kesari, A.D. 657; and from this time to the present day the series is tolerably complete, showing a gradual progress of style

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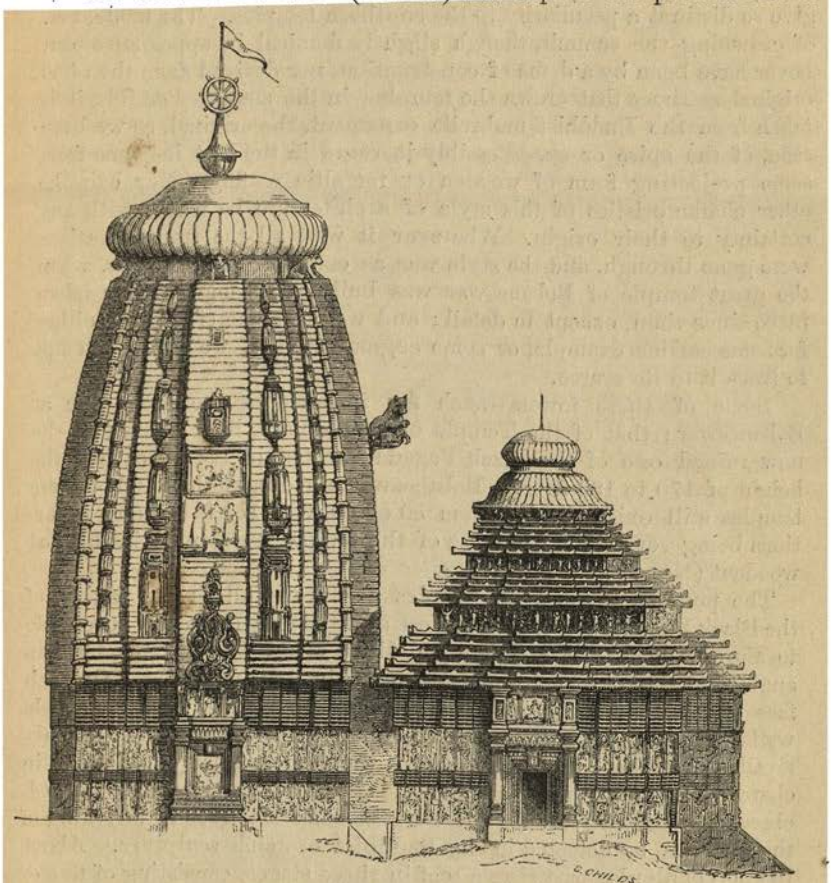
[1] The curious accounts given by Fa Hian in the beginning of the 5th century of the procession of the Tooth from its chapel at Anuradhapoora to Mehentele, and its return after a certain sojourn there, are so exactly transcripts of the annual festival of the Rath Jattra of Juggernath, that there can be no doubt but that the latter is merely a copy, a purely Buddhist peculiarity, and not at all belonging to Hinduism. See Foe Koui Ki, pp. 17 and 335.

[2] J. A. S. B., vol. vi. p. 856 *et seq.*

[3] Asiatic Researches, vol. xv. p. 263 *et seq.*

from the oldest to the most modern—slow it must be confessed, but still sufficient to enable a practised eye always to detect at least the century in which any monument was raised.

The annexed elevation (No. 70) will explain the peculiarities of



70. Restored elevation of the Black Pagoda at Kanaruc. From a drawing by the Author. No scale.

these temples, which are all built nearly on the same plan. They consist in the first place of a great tower or *vimana*, in the centre of which, as in those of southern India, is the cell, a cubical apartment containing the image. No light is admitted to this except by the door, and this is, in all great temples at least, preceded by a square porch or *mantapa*, with a door on each face; three opening towards the court, one to the cell. Other porches sometimes precede this one, but they are always detached buildings, or, if connected, it is only in a slight or temporary manner.

It will be observed that the *vimana* is a very differently formed building from those we have been describing as existing in the south.

It is no longer a pyramid in outline, and consisting of a definite number of stories, crowned by a dome or dagoba; the outline here is always curvilinear, the divisions vertical, and no trace of stories exists in any example I am acquainted with, much less of the cells which give so distinct a peculiarity to the southern temples. The mode, too, of crowning the summit, though slightly domical in appearance, can never have been by a dome of construction, nor derived from the same original as those that crown the temples in the south. Possibly it is taken from the Buddhist umbrella ornament, the original, as we have seen, of the spire or *tee*. Possibly it came in the first instance from some projecting form of wooden or metallic roofing. Nor can the other characteristics of this style of architecture be traced with any certainty to their origin. Whatever it was, all the transformations were gone through, and the style was as complete as it now is, when the great temple of Bobaneswar was built, no change having taken place since then, except in detail; and we must, therefore, look either for some earlier example, or some cognate style, if we would attempt to trace it to its source.

Some of these towers—such for instance as the great one at Bobaneswar; that of the Temple of Juggernath, built 1198, and the now ruined one of the Black Pagoda, erected in 1241—reached the height of 170 to 180 ft. At Bobaneswar alone more than 100 of these temples still exist, ranging from 50 or 60 ft. to 150 ft.—their proportions being very similar to those of the temple represented in the last woodcut (No. 70).

The porches of the great temples are nearly all similar to that of the Black Pagoda, at once the richest and the only one easily accessible to Europeans. It is a square building, about 60 ft. from angle to angle, and the perpendicular part about the same in height. On each face is a projecting doorway very richly ornamented, and the whole walls are covered with sculpture of an elaborate minuteness, only rivalled by that of Boro Buddor, though singularly different in character; this being, as far as the human figures are concerned, obscene in the extreme—while not the remotest trace of anything of the sort can be detected in any Buddhist or Jaina sculpture. Above the perpendicular part rises a roof in three stages, consisting of five or six projecting ledges of stone, the facets of which are all most elaborately carved with processions, or scenes from the chace or agricultural life. Between each series is a range of caryatides, but not a trace of cells, nor of the peculiar ornaments of the south. The whole is crowned by an inverted lotus-like dome-formed termination of singular grace and beauty. Internally it is a plain square apartment, measuring rather more than 40 ft. each way; the roof being formed of projecting stones to about the height of the first series of ledges; here wrought-iron beams about 8 in. square were placed across. On them a false ceiling of immense stones laid from side to side, and above this another similar ceiling exists at the next level. It seems also that a lower one once existed, at least the floor is encumbered by a mass of ruins that could not have come from the lower ceiling, which has

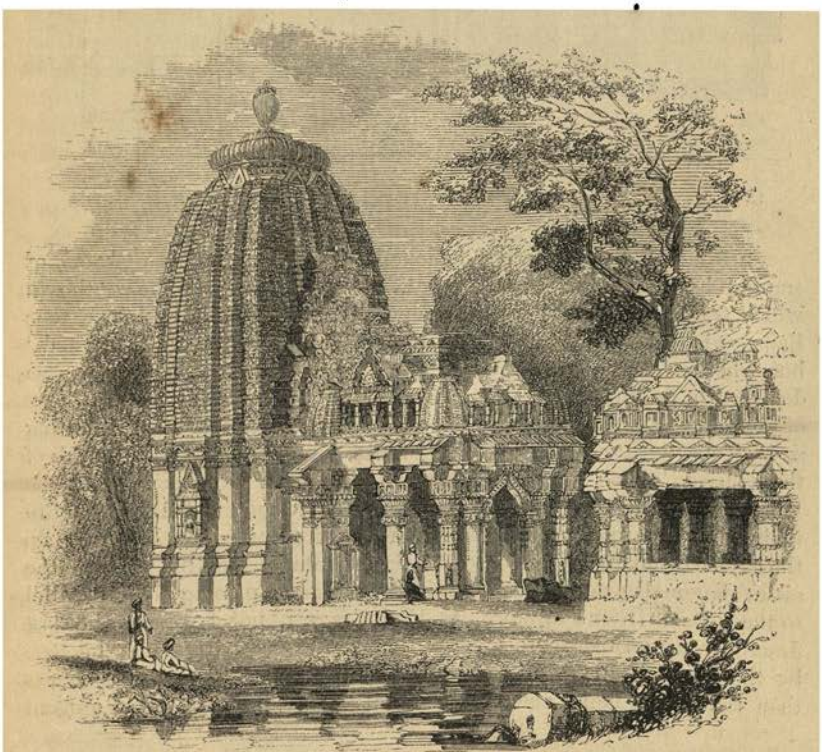
only partially fallen, though it is difficult to guess how stones of the required length could have been either raised or supported.

Sometimes the porch consists of a small portico of two or more pillars; but this arrangement is only found in the smallest and most modern temples, the style being essentially astylar, or devoid of pillars of any sort.

The great temples are all surrounded by square courts, enclosed by high walls, perfectly plain externally, but internally ornamented no doubt by cloisters or colonnades, the precise character of which it is difficult to determine, as the Orissans are singularly jealous of admitting Europeans to their sacred precincts, and at the Black Pagoda and other desecrated shrines the enclosure has generally disappeared.

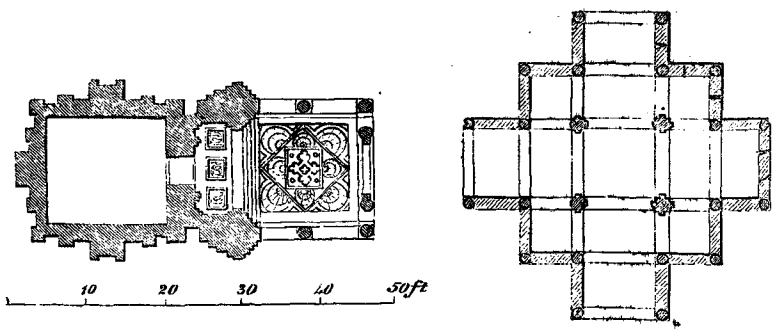
TEMPLES IN UPPER INDIA.

The temples found in the upper provinces of India are all smaller than the great temples of Orissa, and utterly insignificant in size as compared with those of southern India; still they are elegant in design, and, though few in number, they are almost the only landmarks we have to guide us through the dark labyrinth of Indian history in the middle ages.



71. Temple at Barrolli. From a drawing by the Author.

One of the most elegant of these is the now desecrated temple of Barrolli, situated in a wild and romantic spot, near the falls of the Chumbul, whose distant roar in the still night is the only sound that breaks the silence of the solitude that surrounds them. The principal temple, represented in the woodcut No. 71, was erected probably in the eighth or ninth century, and is one of the few of that age now known which were originally dedicated to Siva. Its general outline is identical with that of the Orissan temples. But instead of the enclosed porch, or *mantapa*, it has here a pillared portico of great elegance, whose roof reaches half way up the temple, and is sculptured with a richness and complexity of design that is almost unrivalled even in those days of patient prodigality of labour. It will be observed in the plan that the dimensions are remarkably small, and the temple is barely 60 ft. high, so that its merit consists entirely in its shape and proportions, and in the elegance and profusion of the ornament that covers it.

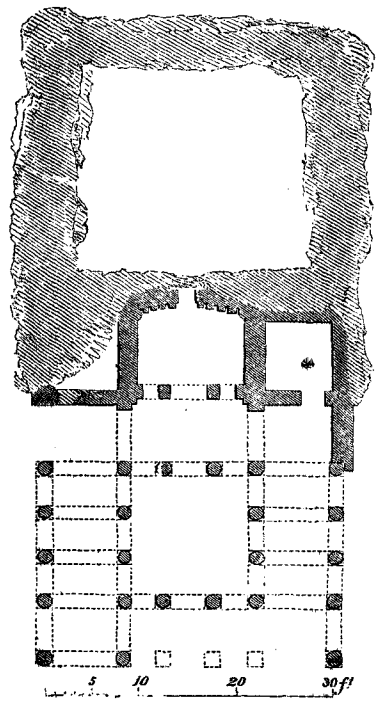


72. Plan of Temple at Barrolli. From drawings by the Author.

In front of the temple is a detached porch, here called a Chaöri, or nuptial hall (the same word I believe as Choultry in the south), in which tradition records the marriage of a Hoon (Hun) prince to a Rajpootni bride, for which purpose it is said to have been erected;[1] but whether this is so or not, it is one of the finest examples of those detached halls known in the north. We miss here the octagonal dome of the Jains, which would have given elegance and relief to its ceiling as well as variety to the spacing of the columns, and to the width of the aisles. These peculiarities were seldom if ever copied by the Hindus, but they seem to have attempted to gain sufficient relief to their otherwise monotonous arrangement of columns by breaking up the external outline of the plan of the mantapa, and by ranging the aisles diagonally across the building, instead of placing them parallel to the sides. In one instance, as Chandravati, not far from the last described, something more artistic has been attempted, as may be seen by the annexed plan, No. 73. It is older probably by some centuries than that at Barrolli, and, though sadly ruined, is the most elegant

[1] Tod's Annals of Rajastan, vol. ii. p. 712.

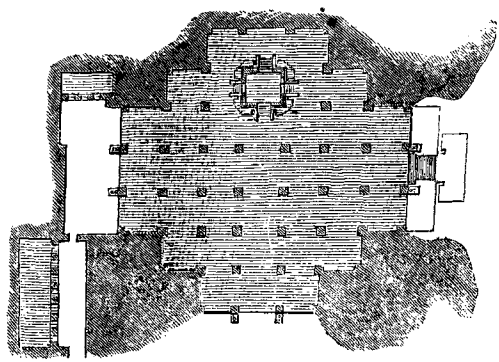
specimen of columnar architecture (so far as I know) in Upper India.[1] The most elegant part of it is the roof, the central square having been covered with a quasi dome, on the principle shown in p. 74, the side compartments by large slabs deeply recessed, and covered with sculpture of the most singular elegance.



73. Temple at Chandravati.

The whole arrangement, however, of this portico may be said to be exceptional—the Barrolli one being by far the most usual—and is carried to even greater extent in some of the caves; that at Elephanta, for instance, is only an amplification of it. The Dhumnar cave at Ellora (woodcut No. 74) closely resembles that at Elephanta in most respects, but is older and finer. It is 150 ft. in width, and its plan is that of a portico of 52 pillars; but being cut in the rock, four are omitted to make way for a *vimana*, which should have been placed externally, as at Barrolli; for the same reason also 12 of the outside pillars here become pilasters from the nature of the situation in which the building is placed. It is nevertheless the largest portico of its class I know of, no built example reaching anything like its size.

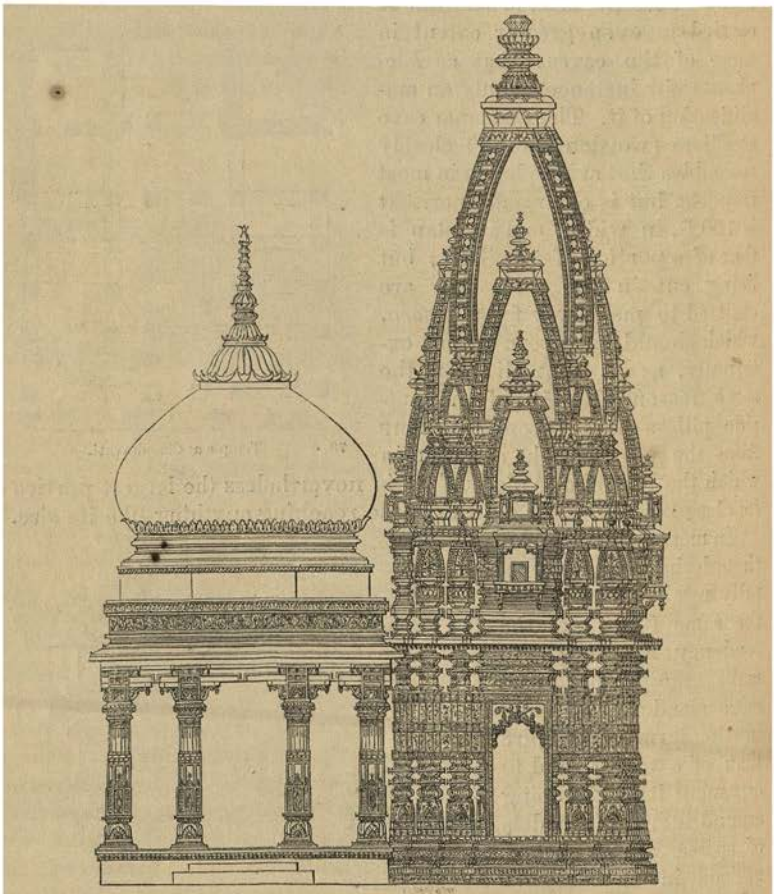
In more modern times, though the temples generally retain something of the same form, yet the tendency is always to make the upper part more slender, and more in the form of a spire than of a tower, and to ornament it by grouping around it smaller models of spires, as we before noticed in speaking of the Pegue Pagoda. This is sometimes carried to such an extent, and with such a minute elaboration of detail, as is



74. Dhumnar Lena Cave at Ellora. From Daniell's Views in Hindostan. Scale 100 ft. to 1 in.

[1] See Illustrations of Ancient Architecture in Hindostan, pl. 6, from which the woodcut is taken. See also Tod's Annals of Rajasthan, vol. ii. The plates are not numbered; the best, however, is the one representing two slabs of the roof of this porch.

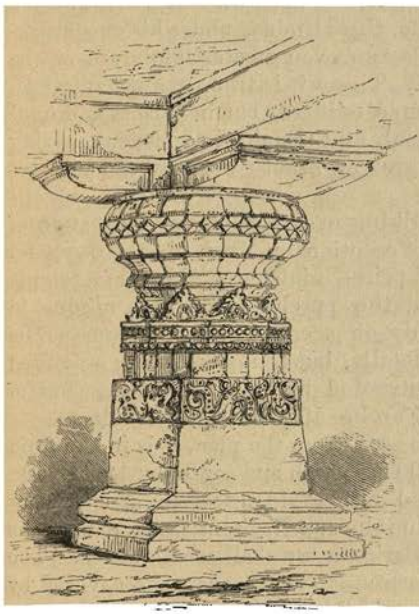
almost inconceivable by those who have not seen it. Generally speaking, this profuse ornamentation is so managed, that the details do not interfere with the outline; still their complexity takes away from anything like grandeur or greatness in design; and though some of these temples may deserve to be called the prettiest edifices possible, they can claim no higher merit. Another peculiarity is, that they sometimes borrow features from Mahometan architecture, imitating the domes and arcades of that style; but even these very parts are assimilated so completely to their own style, that the amalgamation is almost always pleasing. Both these peculiarities are well illustrated in the Vishvesher temple at Benares—the principal one of



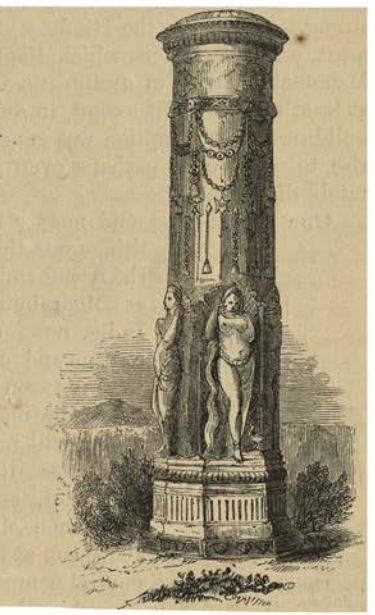
75. Temple of Vishvesher, Benares. From Prinsep's Views in Benares. No scale.

that famous city, and said to be the oldest, though the present edifice can scarcely number 100 years. Like the temple at Tinnevelly, and many others dedicated to Siva, it is a double temple; the woodcut (No. 75) represents the plainest side, and omits one-half of the details,

which it was impossible to express to such a scale; indeed, it is almost inconceivable how much labour has been expended on a temple whose greatest length is only 47 ft., and greatest height 51 ft.; but such is the characteristic of Indian art at the present day, which does not reach beyond the rank of exquisitely elegant littleness. In former times they went to work in a bolder and manlier style, and with an admirable perception of the proper adaptation of the means to the end, as is observable more especially in some of the rock-cut examples. At Ellora, for instance, in one of the caves cut on the scarp of the Kylas, the pillars are more massive than in our heaviest Norman examples, and are designed with a boldness unmatched in any columnar architecture I am acquainted with, as may be seen from the annexed representation (woodcut No. 76). In built temples and porticos there was



76. Pillar in Kylas, Ellora. From a drawing by the Author.



77. Pillar in Barrolli. From a plate in Tod's Annals of Rajasthan.

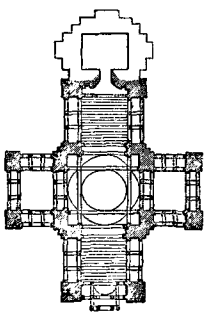
no need for such massive pillars as in the rock-cut examples. Still, at Chandravati, and in the earliest *buildings* generally, the pillars seldom exceed four or five diameters in height. They gradually become more and more attenuated as the style becomes more modern, taking very much the same form as those of the Buddhists and Jains, except that the Hindus use figure sculpture to a greater extent than was usual with their predecessors, as in the annexed example from Barrolli (woodcut No. 77), where 4 elegant female figures surrounding the base form the principal ornament of the shaft. This pillar has lost its bracket capital, which is the invariable accompaniment of Indian pillars of every age and style, and is, after all, perhaps, the most

elegant and appropriate mode of supporting an architrave that has yet been invented by the ingenuity of man.

Mixed Hindu Style.

During the existence of the earlier Patan dynasties of India, the bigotry of the Mahometans did not admit of the Hindus erecting temples of any pretension in the great cities over which they had obtained the dominion, and it is only in remóte corners of the country that we detect here and there isolated examples of the style. With the beneficent and tolerant reign of the Great Akbar (1556 to 1605), a new era dawned for his oppressed subjects: not only were the Hindus tolerated and employed by him, but some of his most intimate friends and associates were of that race. Hence, while his own buildings show a strong tendency to the Hindu style, the Hindus, under his encouragement, erected edifices which display an even greater admixture of the Mahometan forms of architecture. These it is true were not retained, at least to any great extent, in sacred edifices, but in palaces and civil buildings their adoption was general, and remained permanent, giving rise to a style of perhaps even greater beauty than either had separately displayed.

One of the first and most striking examples of this new state of things was the erection by Maun Sing of Jeypore, the friend and prime minister of Akbar, of a temple at Bindrabun, the porch of which is unique in India, not only on account of the elegance of its outline and details, but from its having a vaulted roof, not constructed by projecting stones, but of true radiating arches like our Gothic vaults.



78. Plan of Temple at Bindrabun. By the Author. Scale 100 ft. to 1 in.

As will be seen from the plan, it is in the form of a cross, 100 ft. north and south by 120 ft. east and west, and almost identical in arrangement with such churches as St. Front Perigueux or the Pantheon at Paris, as we shall see hereafter. The central compartment (37 ft. square) is covered by a combination of ribbed and domical architecture, producing an effect not inferior to that of any Gothic vaulting I am acquainted with. The nave, to the east and west of the dome, is roofed by a waggon vault of pointed form, richly sculptured all over. The interior is complete and in perfect preservation, but externally the building either was never finished, or has been allowed to go to premature decay.

A number of similar temples were erected in this neighbourhood under the same influence, though none so magnificent nor so splendid as this. Afterwards the direct influence of Mahometanism gradually died out, and sacred buildings resumed nearly the same form as before, except only with such modifications as those shown in the temple of Vishvesher (woodcut 75), which may be considered as a typical example of the modern temple form of the Hindus. The change, how-

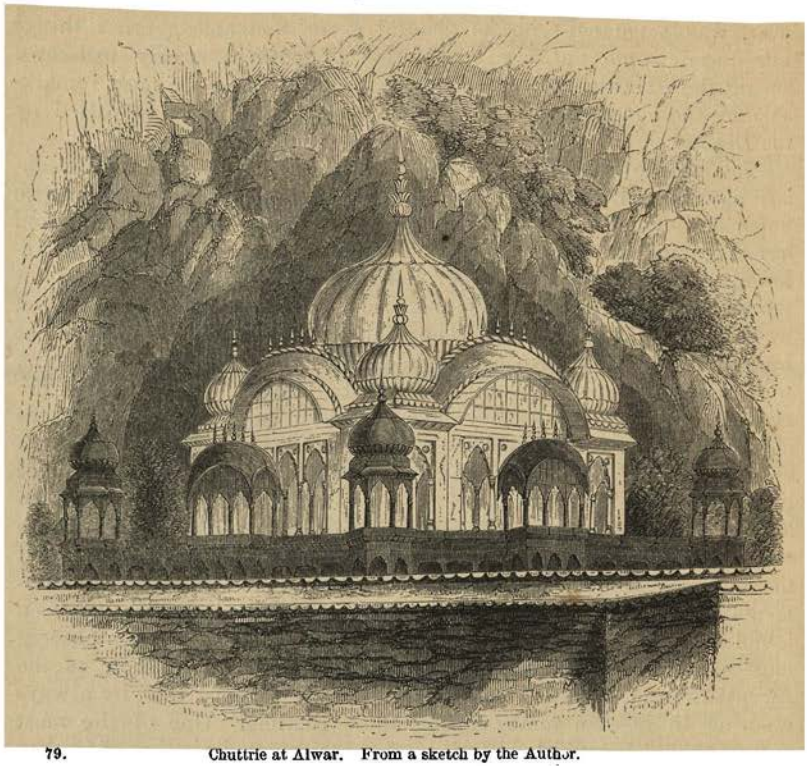
ever, was permanent in the general style, and among other things introduced some entirely new forms of edifices utterly unknown among the Hindus before this time. Amongst these the most remarkable are the cenotaphs to the dead, or *Chuttries* as they are called by the Hindus.

To a people who believe in the transmigration of souls, as the Buddhists always did, and the Hindus very generally do, it is of little importance what becomes of its corporeal encasement after the soul has taken up its new abode; in all ages, therefore, we find the followers of these religions either burning the bodies of the dead, or throwing them into the rivers, or merely exposing them to be devoured by beasts or birds of prey. The Mahometans on the contrary, or at least that section of them who invaded India, the Moguls and Tartars, were in all ages pre-eminently a tomb-building race, and by far the most magnificent edifices they have erected in India are the sepulchres of their kings. The Hindus also adopted this practice after the reign of Akbar, at first in their own peculiar fashion, erecting domes like those of the Jains, on 4 or 8 or 12 pillars, with porticos *ad libitum*, on the spot where the bodies were reduced to ashes. There was this difference between the Hindu and Mahometan practice, that the former were generally content to leave the erection of these monuments to the filial piety of their successors, a practice which has been found singularly inimical to architectural magnificence of this class in most countries, while the great tomb-building nations, such as the Egyptians and Moguls, took care to provide against this, by always erecting their own tombs during their lifetime. One of the most extensive and beautiful collections of these cenotaphs is that of Oudeypore, near the sacred fountains, where the Rajas of that race and their wives have been buried from time immemorial.[1] They are not confined however to that locality, but almost every little capital of Rajpootana can point to some monument of the same class, all modern of course, but some of them of great elegance.

Most of these retain their pure Hindu, or rather Jaina forms of columnar architecture. The most modern, however, and those nearest the influence of the great Mahometan capitals of Agra and Delhi, adopt almost exclusively the arcaded forms of that style of architecture, but, singularly enough, without introducing the true arch, every apparent arch, in fact, being composed of two stones or great brackets meeting one another from the opposite sides, and carved in the form of a foiled arch.

The annexed woodcut, taken from one erected to the memory of the late Raja of Alwar, will explain the general form and appearance of these monuments. The central part is of white marble streaked with black; the terrace and surrounding pavilions of red sandstone. Those of the Bhurtpore Rajas in this neighbourhood are more extensive and

[1] A view of one of these chuttries is given in my Illustrations of Indian Architecture, pl. xiv.



79. Chuttrie at Alwar. From a sketch by the Author.

more elegant than this, and are built wholly of the fine yellow sandstone of the district in which they stand. But this instance appears most characteristic of the modern form of art, and the Bhurtpore style is best exemplified in their palaces, of which more hereafter. We find in this example a new and remarkable form, which the Hindus introduced, and the Mahometans afterwards adopted, which is the curious curvilinear roof of the central compartment. This is peculiar to India, and is copied from the bamboo-roofed huts of the lower provinces, whose elasticity requires them to be bent, that they may have the requisite firmness. In them it is singularly graceful, but it requires long habit to accustom the eye to it in stone. In small examples it is extremely pleasing, but on a large scale it has a quaint appearance that it is almost impossible to get over.

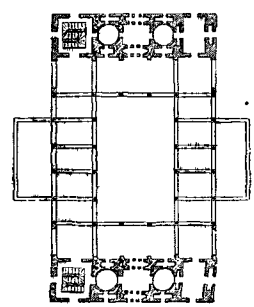
Palaces.

It is not so much in their temples or tombs as in their palaces that the modern Hindus have displayed their architectural magnificence. Every little capital possesses a regal residence of more or less pretension, and every hill-top, in some of the native states, is crowned with hunting-seats or summer-palaces. Some of these, such as those of Jeypore and Oudeypore, are of great extent and magnificence; but,

large or small, all are designed with that exquisite feeling for grace of outline which characterises the Hindus in all ages, and all are ornamented with that profusion of elaborate detail which extreme cheapness of labour enables them to bestow on their largest as on their smallest works. Among these, by far the most beautiful as an architectural object is the garden-palace of Deeg, erected by Sooraj Mull, the virtual founder of the Bhurtpore dynasty in the middle of the last century. It wants, it is true, the massive character of the fortified palaces of other Rajpoot states, but for grandeur of conception and beauty of detail it surpasses them all.

The whole palace was to have consisted of a rectangular enclosure, twice the length of its breadth, surrounded with buildings, with a garden in the centre. Only half of this has been completed, the square being 170 by 120 paces, crossed in the centre by ranges of the most beautiful fountains and parterres laid out in the formal style of the East, interspersed with architectural ornaments of the most elaborate finish.

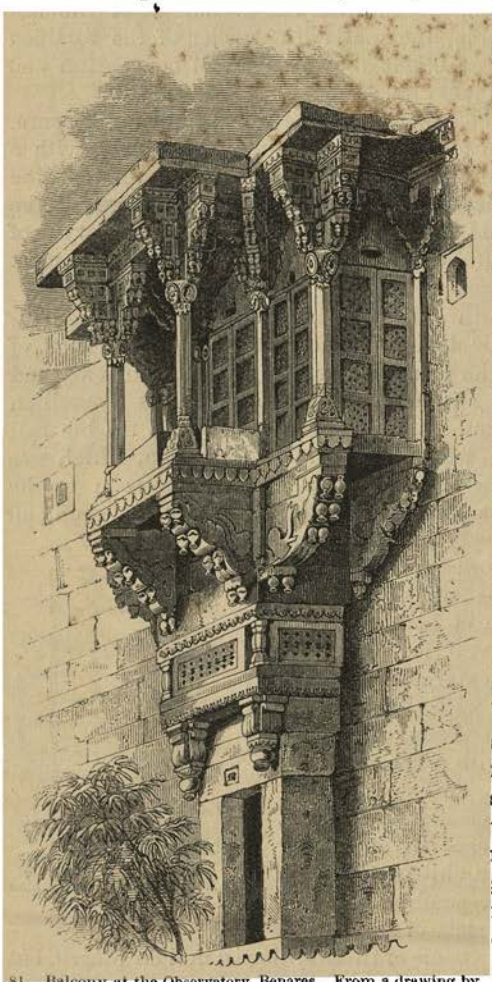
The pavilion on the north side contains the great audience-hall, 76 ft. 8 in. by 54 ft. 7 in., divided in the centre by a noble range of arcades, behind which are the principal dwelling apartments, two, and in some parts three, stories in height. Opposite this is a pavilion occupied principally by fountains. On one side stands a marble hall attached to an older palace facing the principal pavilion, which was meant to occupy the centre of the garden. As will be seen by the plan (woodcut No. 80) it is a parallelogram of 152 ft. by 87 ft., each end occupied by a small but very elegant range of apartments, in two stories; the central hall (108 ft. by 87 ft.) is supported by 4 rows of columns, and open at both sides; at each end is a marble reservoir for fountains, and a similar one exists externally on each side. The whole is roofed with stone, except the central part, which, after being contracted by a bold cove, is roofed with a flat ceiling of timber exquisitely carved. This wooden ceiling seems to have been considered a defect, nothing but stone being used in any other part of the palace. The architect therefore attempted to roof the corresponding pavilion of the unfinished court with slabs of stone 34 ft. in length, and 18 in. square. Some of these still exist in their places, but the weight was too great for the arcades, only 18 in. thick, and even that not of solid stone, but of two facings 4 or 5 in. thick, and the intermediate spaces filled in with rubble. Besides this, though the form of the arch is literally copied from the Mahometan style, neither here, nor elsewhere throughout the palace, is there a single true arch, the openings being virtually covered by two brackets meeting in the centre.



80. Hall at Deeg. From a plan by the Author.

The general appearance of the arcades of these buildings may be characterised as more elegant than rich. The glory of Deeg, however,

consists in the cornices, which here are generally double, a peculiarity not seen elsewhere, and for extent of shadow and richness of detail surpass any similar ornaments in India, either in ancient or modern buildings. The lower cornice is the usual sloping entablature, almost universal in such buildings. This was adopted apparently because it took the slope of the curtains, which almost invariably hang beneath its projecting shade, and which when drawn out seem almost a continuation of it. The upper cornice, which was horizontal, is peculiar to Deeg, and seems designed to furnish an extension of the flat roof, which in Eastern palaces is usually considered the best apartment of the house; but whether designed for this or any other purpose, it adds singularly to the richness of the effect, and by the double shadow affords a relief and character seldom exceeded even in the East.



81. Balcony at the Observatory, Benares. From a drawing by the late James Prinsep.

Generally speaking, the arcades of Deeg are neither so rich nor so appropriate as the bold bracket capitals of their older styles. That the bracket is almost exclusively an original Indian form of capital can, I think, scarcely be doubted; but the system was carried much further by the Moguls, especially during the reign of Akbar, than it had ever been carried by its original inventors, at least in the North. The Hindus, on receiving it back, luxuriated in its picturesque richness with a boldness that astonishes every beholder; and half the effect of most of the modern buildings of India is owing to the bold projecting balconies and fanciful kiosks that diversify the otherwise plain walls. The accompanying example (woodcut No. 81), from the observatory erected by Jey Sing (A. D. 1698–1742) at Benares, is a rich and elegant specimen of the style, though hardly

so elegant as some of the Moslem examples which are found at Agra, Delhi, and in the neighbourhood of these two capitals. But whether used by Moslems or Hindus, these balconies have a very pleasing effect. They relieve the monotony of the plain face of a building, without interfering with its main lines, or requiring any great constructive skill for its introduction.

LANDING-PLACES OR GHÂTS.

Another object of architectural magnificence peculiar to northern Hindostan, is the construction of the *ghâts* that everywhere line the river-banks in most of the great cities, more especially those which are situated on the Ganges. Benares possesses perhaps the greatest number of edifices of this class; but from Calcutta to Hurdwar no city is without some specimens of this species of architectural display. The Ghoosla Ghât at Benares (woodcut No. 82), though one of the most

82. Ghoosla Ghât, Benares. From Prinsep's Views.

modern, may be taken as a fair specimen of the class, though many are richer and much more elaborately adorned. Their object being to afford easy access to bathers, the flight of steps in front is in reality the *ghât* and main building itself. These are generally broken, as in this instance, by small projections, often crowned by kiosks, which take off the monotony inherent in long lines of narrow steps. This flight of stairs is always backed by a building, which in most instances

is merely an object of architectural display, without any particular destination, except to afford shelter from the rays of the sun to such of the idle as choose to avail themselves of it. When the bank is high, the lower part of these buildings is solid, and when, as in this instance, it is nearly plain, affords a noble basement to an ornamental upper story with which they are generally adorned, or to the temple which frequently crowns them.

Though the Ganges is, *par excellence*, the river of ghâts, one of the most beautiful in India is that erected by Alaya Baiee (Holkar's widow) at Maheswar on the Nerbudda: and Ougein and other ancient cities almost rival Benares in this respect. Indeed, there is scarcely a tank or stream in all India that is without its flight of steps, and it is seldom indeed that these are left without some adornment or some attempt at architectural display, the proximity of water being always grateful in so hot a climate, and an especial place of favourite resort with a people so fond of washing and so cleanly in their habits as the Hindus.

Reservoirs.

The same fondness for water has given rise to another species of architectural display peculiar to India, in the great reservoirs or *bowlees*, which are found wherever the wells are deep and water far from the surface. In design they are exactly the reverse of the ghâts above described, as the steps are wholly below the ground, descending to the water often at a depth of 80 or 100 ft. Externally they of course make no display, the only object seen above ground being 2 pavilions which generally mark the entrance, between which a bold flight of steps, from 20 to 40 ft. in width, leads down to the water. Facing the entrance is a great screen, rising perpendicularly from the water to the surface of the ground, and dividing the stairs from a circular sinking or well, up which water is drawn by pulleys by those who prefer that mode of obtaining it to that of descending the steps to seek it. The walls between which the flight of steps descends are ornamented by niches, or covered with galleries leading to the great screen. Where the depth is great there is often a screen across the stairs about half way down.

To persons not familiar with the East such an architectural object as a *bowlee* may seem a strange perversion of ingenuity, but the grateful coolness of all subterranean apartments, especially when accompanied by water, and the quiet gloom of these recesses, fully compensate, in the eyes of the Hindu, for the more attractive magnificence of the *ghâts*. Consequently the descending flights of which we are now speaking have often been made more elaborate and expensive pieces of architecture than any of the buildings above ground found in their vicinity.[1]

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[1] For a view of one at Boondee see Picturesque Illustrations of Ancient Architecture in Hindostan, plate xvii.

DAMS.

In the same manner the bunds or dams of the artificial lakes, or great tanks, which are so necessary for irrigation, are often made works of great architectural magnificence, first by covering them with flights of steps, like those of the ghâts, and then erecting, in the breaks between these flights, temples or pavilions, and kiosks, interspersed with fountains and statues. Where all these are of marble, as is sometimes the case in Rajpootana,[1] the whole makes up as perfect a piece of architectural combination as any the Hindus can boast of.

It would be tedious, however, to enumerate, without illustrating them—which the limits of this work will not admit of—all the modes of architectural magnificence of the Hindus. Like all people untrammelled by rules and gifted with a feeling for the beautiful, they adorn whatever they require, and convert every object, however utilitarian in its purposes, into an object of beauty, knowing well that it is not temples and palaces alone that are capable of such display, but that everything which man makes may become beautiful, provided the hand of taste be guided by sound judgment that never forgets what the object is, and never conceals the constructive exigencies of the building itself. It is simply this inherent taste and love of beauty, which the Indians seem always to have possessed, directed by unaffected honesty of purpose, which enables those who are now without independence, or knowledge, or power, to erect, even at the present day, buildings that will bear comparison with the best of those erected in Europe during the middle ages. It must be confessed that it would require far more comprehensive illustration than the preceding slight sketch of so extensive a subject can pretend to, to make this as apparent to others as it is to any one who has personally visited the objects of interest with which India abounds.

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[1] Two specimens of Bunds of this sort are given in the Picturesque Illustrations of Indian Architecture, plates xii. and xiii.

CHAPTER III.

CASHMEER.

CONTENTS.

Style of Architecture — Temples at Martund — Pandrethan — Payech, &c.

CHRONOLOGY.

	DATES.		DATES.
Asoka establishes Buddhism: inscription at Kapur di Giri	B.C. 250	Salitaditya builds enclosure at Martund	A.D. 752
Mihiricula invades Ceylon	105	Jayapira marries daughter of Jayanta of Gaur	814
Megahavahana invites Bauddhas, and invades Ceylon	A.D. 434	Avanti Verma builds Temple at Avantipore	890
Hiranya contemporary Baharam Gaur Vicranaditya, &c.	440	Partha, his minister, built Temple at Pandrethan about	1000
Ranaditya married daughter of Chola Raja; builds Martund about	600	Xemagupta destroyed Viharas of Buddhists	1030
Pratapatitya founds Bratapapar about	650	Alla Uddeen: Moslem conquest of Cashmeer	1300

The last division of Indian architecture which remains to be examined is that of Cashmeer, which, though scarcely of much importance in itself, still possesses some peculiarities well worthy of attention, and consequently some account of it is necessary in a work professing to treat of all styles.

Our knowledge both of the inhabitants and of the architecture of Cashmeer is very limited. The people seem to be quite distinct from the Hindus on one side and from the Persians on the other. There is reason to believe that they are nearly connected by race with the inhabitants of the Punjab, and traces of their architecture are found throughout that important district.[1]

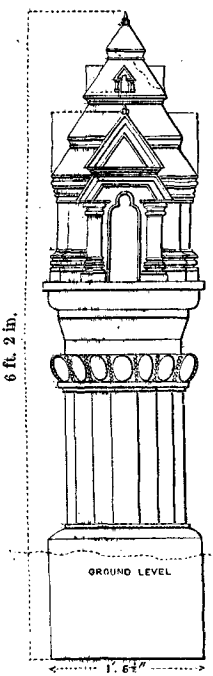
The authentic history of Cashmeer, as of almost every other country of India, begins with Asoka, though its annals stretch back, with something like authenticity, to a Gonerda, who was contemporary with the Mahabarat or great war in the twelfth or thirteenth century B.C. Their principal historical volume, however, the Raja Tarangini, first

[1] Our information with regard to the architecture of Cashmeer is derived principally from (1) the engravings in Vigne's Travels in Cashmeer, and which, unfortunately, are very inferior to his original drawings, which are beautiful and accurate; (2) a memoir by Major A. Cunningham, of the Bengal Engineers, published in the Journal of the Asiatic Society of Bengal, Sept. 1848. The drawings accompanying this memoir are by far our principal guide on this subject. (3) A paper by Capt. Abbot, in a subsequent number of the same journal. He gives drawings of examples which he found in the Punjab, which are our principal authority for the belief that the style of Cashmeer and that of the Punjab are identical.

begins to detail events when it speaks of the introduction of Buddhism into the valley by Asoka. This has been remarkably confirmed by the discovery of a copy of his edicts at Kapur di Giri in Peshawur, showing that his power extended even beyond the Indus in this direction. To what extent the new doctrine was embraced by the inhabitants of the valley we do not know, nor how long it remained the state religion; nor need we stop here to inquire, for not one vestige of their monuments has yet been brought to light. They can scarcely have erected topes of any importance, or something of them would remain;[1] but then they may have possessed no relics, and, if Buddha did not visit their valley, no sacred spot to commemorate, while it is more than probable that their halls and temples were constructed of Deodar pine, which still is the principal material used in the erection of mosques and public buildings throughout Cashmeer, and these of course have perished. There are no remains now existing in the country which can with any certainty be ascribed to an earlier date than the middle of the eighth century.

The annexed woodcut (No. 83) will explain most of the peculiarities of the style. It is taken from Major Cunningham's memoir, and represents a small model of a Cashmeer temple placed on a pillar, an object common in Bengal, as well as in this country.

The temple in this instance is surmounted by four roofs, though in all the built examples known there are only two, and it is obvious that they are copied from the usual wooden roofs common to most buildings in Cashmeer, where the upper pyramid covers the central part of the building, the lower a verandah, separated from the centre either by walls or merely by a range of pillars.[2] In the wooden examples the interval between the two roofs seems to have been left open for light and air; in the stone buildings it is closed with ornaments. Besides this, however, all these roofs are relieved by dormer windows, of a pattern very similar to those found in mediæval buildings in Europe, and the same steep, sloping lines are used also to cover doorways and porches, being virtually a section of the main roof itself, and evidently a copy of the same wooden construction.



83. Model of Temple in Cashmeer.

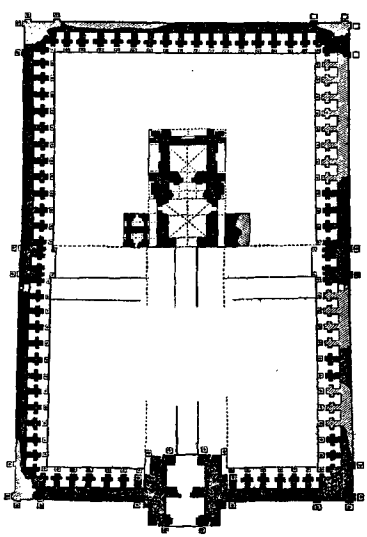
The pillars which support the portico and the one on which the model stands are by far the most striking peculiarity of this style, their shafts being almost identical with those of the Grecian

[1] When Huiang Sung visited Cashmeer about 630 A.D. Buddhism was still flourishing in the valley. He mentions four Topes, but not apparently of great importance.

[2] See drawing of mosque by Vigne, vol. i. p. 269; and also J. A. S. B., 1848, p. 253, containing Major A. Cunningham's paper on the subject, from which this and the three following woodcuts are taken.

Doric, and wholly unlike anything found in any other part of India. Generally they are from 3 to 4 diameters in height, diminishing slightly towards the capital, and adorned with 16 flutes, rather shallower than those of the Grecian order. Both these bases and capitals are, it is true, far more complicated than would have been tolerated in Greece, but at Pæstum and in Rome we find with the Doric order a complexity of mouldings by no means unlike that found here. At all events we find in Cashmeer no trace of the bracket capital of the Hindus, nor of the changes from square to octagon, or to the polygon of 16 sides, and so on. Indeed, whether the affinity to the Greek be or be not conceded, it is quite certain that no trace of such an order is found in India proper. May it not be regarded as a remnant of the Greek kingdom of Bactria, altered, it is true, in the lapse of centuries, but still retaining unmistakeable marks of its origin?

There is still one other peculiarity of this style which it is by no means easy to account for. This is the trefoiled arch, which is everywhere prevalent, but which in our present state of knowledge cannot be accounted for by any constructive necessity, nor traced to any foreign style from which it could have been copied. My own impression is that it is derived from the façades of the Chaitya halls of the Buddhists. Referring, for instance, to woodcut No. 19, it will be perceived that the outline of the section of that cave at Ajunta is just such a trefoil as is everywhere prevalent in Cashmeer, and, as both there and everywhere else in India, architectural decoration is made up of small models of large buildings applied as decorative features wherever required, it is by no means improbable that the trefoiled façade may have been adopted in Cashmeer as currently as the simple horse-shoe form was throughout the Buddhist buildings of India Proper. All these features however mark a local style differing from anything else in India, pointing certainly to another race and another religion, which we are not now able to trace to its source.



84. Temple of Martund. From a drawing by Major A. Cunningham.

The architectural history of Cashmeer commences with the Gonerdya line, who were restored to power about the middle of the 5th century; one of these, Ranaditya, built or commenced the temple at Martund, which was completed by Lalitaditya, a king of another dynasty, who in the middle of the 8th century avowedly added the enclosure. We have no means of knowing whether the ruin which now remains includes any part of the older erection. It is the finest building in the

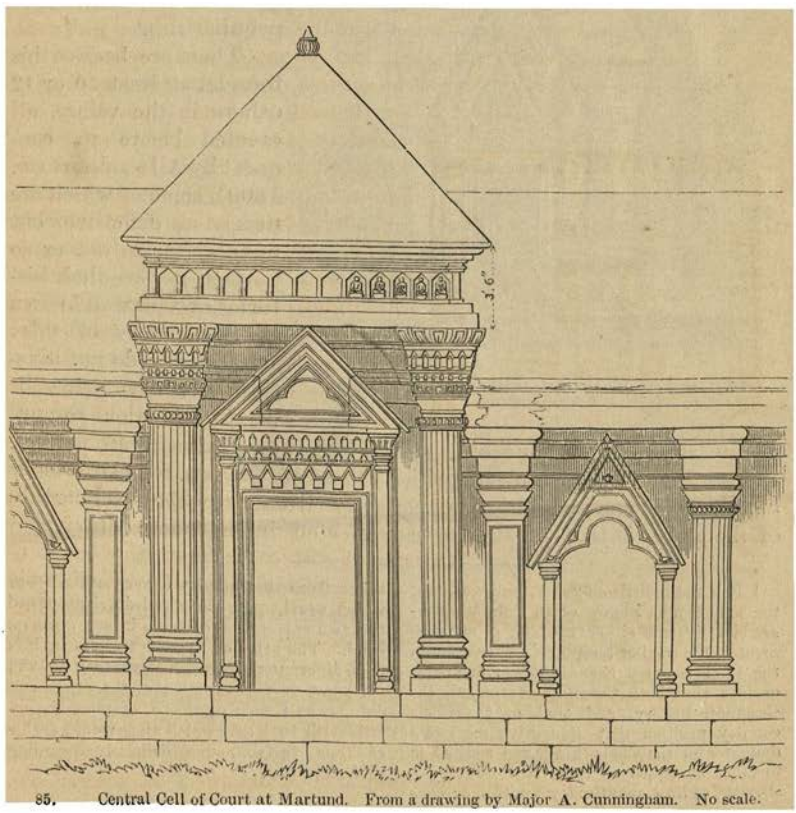
valley, and is at least as old as the last-named date, and possibly, in part at least, three centuries earlier.

As will be seen by the annexed plan, it is of the usual form of Hindu temples; a *vimana* with its cell, an *antarala* or pronaos, and *mantapa* or porch. It has two wings, which are peculiar, but seem to have been joined to the main façade, so as to give it breadth, and possibly also height; for they are solid in their construction, and both now incline outwards, as if their superincumbent mass had been too heavy for their foundations.

No trace of the roof remains, which led the Baron Hugel to conjecture that it never had one. This Major Cunningham disputes; and the most probable supposition seems to be that it was of wood, and has perished, or, like some of those in the south, it may have been constructed of badly burnt bricks, which have decayed. The lower part which exists is similar in all respects to the other temples of the same class found around it.

The enclosure that surrounds the temple is very remarkable. Though in ruins, we can make out its original design.

The internal dimensions of the court were 220 ft. by 142; the number of pillars 84—a sacred number with the Hindus. Between each



85. Central Cell of Court at Martund. From a drawing by Major A. Cunningham. No scale.

pair was a cell, more like those of the Jaina temples than anything purely Hindu; indeed, if we may trust such drawings as we have, the friezes are ornamented with cross-legged figures, which could only have belonged to that sect; but I fear the drawings are hardly to be trusted.

In front of the temple was the great gateway, of which only the foundation remains; but in the centre of each side of the court was a cell more important than the rest, probably resembling the great gateway. One of these with the niche on its side is shown in the annexed woodcut (85), and shows most of the peculiarities of the style—the straight pyramidal roof, the Doric-like shafts, here loaded with enormous capitals, but still with ornaments familiar to the student of Greek art; the straight-lined pedimented doorway; and more especially the trefoiled arch, which is so constant a characteristic:—all features unlike anything else in India, and pointing to a foreign style mixed up with local constructive peculiarities.[1]

86. Temple at Pandrethan. From a drawing by Major A. Cunningham.

There are, besides this temple, at least 10 or 12 others in the valley, all erected before its conquest by Alla-u-deen (A.D. 1300), some of which are nearly as extensive, but none either so old or so perfect, nor are their histories even so well known as the history of this; and as they do not illustrate any new points, it would be tedious to enumerate them here. One only seems to have remained quite perfect, and to retain all its peculiarities—that of Payech. A still older temple, and one which more perfectly illustrates the peculiarities of the style, is that of Pandrethan, erected in the 10th century, and

[1] It is not a little singular, however, that the only temple I know of in India that resembles this one either in plan or arrangement is the smaller temple of Conjeveram in the Chola country near Madras; and it is curious that both the Raja Taringani, the Cashmeer history, and that of the Chola country mention that Ranaditya married a daughter of the Chola king, and assisted in forming an aqueduct from the Cauvery—showing at least an intimacy which may have arisen from that affinity of race and religion, which, overleaping the intruded Arians, united the two extremities of India in one common bond. The style of the two temples is, it is true, different; but when I saw the one I did not know of the existence of the other, and did not, as I now would do, examine the details with that care which alone would enable any one to pronounce definitely regarding their affinities.

which, though ruined, still preserves the characteristics of the Cashmeerian style with singular distinctness.

Captain Abbot's examples from Mullote in Potowar between the Indus and the Jelum are only interesting as showing the same style existing on the plains, instead of being confined wholly to the secluded valley of Cashmeer. No doubt many other examples will soon be brought to light, now that the country is in our hands, and some probably which may enable us to trace nearer to its origin a style of so much interest.

The architecture of Cashmeer was quite unknown till about the year 1830. Notwithstanding this it has attracted a great deal of attention. Its close resemblance in many points to the Grecian style, its striking difference from the buildings of all neighbouring nations, fully account for this. We must remember that the inhabitants of this remote valley were an Indian people protected by their situation from the violent changes to which the inhabitants of the plains were exposed. We are therefore prepared to expect that the history of this district will illustrate that of the great Indian people in many important respects; and such we find to be the case.

The Raja Tarangini has been pronounced by the best authorities to be the best, if not the only, true history of an Indian race that has reached our time. But, if I mistake not, the architecture of this land may even now throw more light on the subject than even that famed chronicle of her earlier kings.

RECAPITULATION.

Having now gone through all the different phases which Indian architecture has assumed from the earliest period at which we become acquainted with it till the present time, it only remains, in conclusion, to recapitulate, in a few words, the more salient points to which attention has been directed.

It has been shown that the history of Indian architecture commences not earlier than the middle of the third century before Christ, when Asoka made Buddhism the state religion of India, and sought to commemorate the fact, not only by inscriptions, but by monumental columns and other lasting memorials, some of which remain to our day. It then begins with a strong admixture of Grecian, or at least of Western art, as if the Indians were then first learning from foreigners an art they had not previously practised; but this extraneous element soon died out, and is not again to be traced, except perhaps in Cashmeer, where it seems to have long remained in force.

From the time of Asoka till nearly that of the Mahometan conquest there exists no difficulty in tracing the whole history of Buddhist art—a complete series of examples existing in the caves and topes; which, taken in connexion with those of Afghanistan and Ceylon, and other buildings, amply suffice to elucidate the subject. From that time to the present day we find abundance of examples in Burmah, Thibet, and Nepal, which, with collateral illustrations from Java and elsewhere,

enable us to trace the history of the Buddhist style through more than 2000 years. There is every reason to believe that from the buildings themselves, and from the paintings and sculptures with which they are adorned, the whole history of this important sect may be restored with the utmost distinctness and certainty.

In India this style was succeeded by that of the Jains, though this latter seems scarcely to have arisen out of the former, but to be the lineal descendant of some older style whose traces have not yet been detected farther back than the 9th or 10th century, though some may probably still exist between India and the western parts of Asia. If the Jaina buildings want the manly vigour and boldness of the Buddhist style, they far surpass it in the elegance both of their combinations and of their details. In these respects the Jaina style surpasses any other style in India, and has had in consequence more influence on the Mahometan art, and, through it, on the modern Hindu, than any other—circumstances which would render its study singularly interesting, had we the means available for its prosecution. At present, however, they do not exist; and from the circumstance of none of the great kingdoms of India having ever adopted the Jaina as a state religion, its traces are only discovered in the more remote corners of the country, where they have hitherto generally escaped the notice of travellers.[1]

The principal Hindu style arose in the south among the aboriginal Tamul races, and extends north as far as Ellora. We do not know at what age it first was practised, no example having yet been traced to so early a date even as the 4th or 5th centuries after Christ. When it first appears, it seems to have adopted Buddhist forms, or at all events to have arisen out of the same forms from which the Buddhists elaborated their style. Hindu architecture continues almost unchanged to the present day, except that the Mahometan influence is sometimes strong in civil buildings; and cases occur in which a strange mania for copying debased European art has crept even into the sanctums of their temples. This, however, is a rare occurrence; and generally speaking it is only in the inferiority of workmanship and design that we trace the influence of age in this class of art.

In the north another style of art arose, and different forms were adopted, though from what original it is difficult to guess: the earliest example is in the 7th century, and then the style was perfectly matured. It must be pursued much further back before we can hope to detect, in ill-concealed traces of structural exigencies, those forms which were afterwards elaborated into the orders we now find.

During 10 or 11 centuries, through which we can trace its history, the changes it underwent were slight, until after the reign of Akbar, when the introduction of Saracenic forms gave it a freedom and grace it had not known before; and though its details became less pure, its

[1] I cannot help suspecting that it will be discovered eventually that Cashmeer and the Punjaub were Jaina at the time of the Mahometan conquest, and that consequently the Cashmeerian style should virtually be classed under this head.

forms were improved by the addition. It is now sinking under our influence, till it is little better than a caricature of its former self.

In Cashmeer there still exists another style, differing from all these, showing, in the first place, a people secluded from the rest, perhaps retaining its earliest forms unchanged, or at all events owning different influences and practising a different art from any of the people around. When properly investigated, it may throw new and unexpected light on this hitherto obscure subject. Much, however, very much, still remains to be done, before the subject of Indian art can either be understood or be placed on a satisfactory footing of scientific induction. No works have yet been published exclusively devoted to the subject, except, I am sorry to say, my own; and mine is imperfect not only from the impossibility of one situated as I was effecting more without aid, but also from the great difficulty of publishing such works in this country, where the subject interests so few. Were the above sketch doubled or trebled in length, and the illustrations increased tenfold—for which materials exist—Indian architecture might rank with the known styles of the rest of the world. As it is, it is almost impossible to find any one either capable of giving an opinion on this class of art, or even of explaining the ground on which an opinion of its merits or defects should rest. It stands so completely alone, so entirely separate from the other forms of architecture of the world, that it cannot well be compared with any of them, without the risk of false and erroneous impressions being conveyed, more likely to mislead than to instruct. It does not, however, possess either the solid grandeur and simple magnificence of the Egyptian style, or any of that sublime aspiration after eternity that strikes with awe every visitor to the valley of the Nile.

It would be as reasonable to compare the Indian epics and dramas with those of Homer and Sophocles as to compare the Indian style of architecture with the refined elegance and intellectual superiority of the Parthenon and other great works of Greece. Probably a nearer comparison might be instituted with the Gothic styles of the middle ages; yet, while possessing the same rich irregularity and defiance of all rule, it wants that bold manliness of style and loftiness of aspiration which dignifies even the rudest attempts of those enthusiastic religionists. Though deficient in these respects, the Indian styles are unrivalled for patient elaboration of the details, which are always designed with elegance, and always executed with care. The very extent of ornamentation produces feelings of astonishment, and the smaller examples are always pleasing from the elegance of the parts and the appropriateness of the whole. In no styles is the last characteristic more marked than in those of India; for whether the architects had to uphold a mountain of rock or the airiest dome, or merely an ornamental screen work, in all instances the pillars are exactly proportioned to the work they have to do, and the ornaments are equally suited to the apparent strength or lightness of effect which the position of the mass seems to require. No affectation, and no imitation of other styles, ever interfere to prevent the purpose-like expression

of every part, and the effect consequently is always satisfactory and pleasing, and, when the extent is sufficient, produces many of the best and highest modes of expression of which the art of architecture is anywhere capable.

It may be that persons who have not had an opportunity of studying the buildings on the spot may not be inclined to form so favourable an estimate of the Indian styles as that here expressed; and, indeed, without actual inspection, no sufficient means exist for forming a correct judgment on the subject at all. But whether the architecture be really good or only passable, it is interesting as the art of a large portion of the human family. It affords the only means of judging correctly of the state of civilization and power of a people whose history is lost, or is so obscure as to be almost illegible. It should also interest the student, as showing how numerous and various the forms are which may be used for architectural purposes, and each as appropriate as any of those he is already familiar with: for, though men do not now believe, as they did a few years ago, that there are only five different forms of a pillar admissible, they do not yet know how numerous are the ways in which pillars may be employed. The adaptation of every part to the thousand different purposes to which it may be applied necessarily causes an infinite variety. This in fact is the great secret of architectural propriety, but which the Indian and Gothic architects seem alone fully to have appreciated.

To these points we shall have frequent occasion to return hereafter. In the mean while we must pass on to other styles, created to suit the exigencies of other climates, and to express the feelings of other races of mankind.

BOOK III.

CHAPTER I.

CHINA.

CONTENTS.

General Remarks — Pagodas — Pailoos — Tombs — Domestic Architecture — Temples.

THE Chinese differ from all European nations, not only in the objects they propose to attain by their arts, and in the forms in which they seek to embody their conceptions, but also in the processes by which they carry them out. Hence, to write generally on their arts and sciences, in a manner to be intelligible, would require us to go into great detail, and to employ illustration to a very great extent. But the particular art with which our subject is concerned requires, and indeed admits, but very little to be said of it. The simple fact is, that China possesses scarcely anything worthy of the name of architecture. This is of importance as enabling us to understand how, in other countries, as in ancient India, a high degree of civilization may have been attained without producing any coeval monuments of durable character.

A priori, it certainly may seem strange that the Chinese should not have excelled in this art, for they are and always were most extensive builders, as may be seen by the massive walls that surround all their cities, and the great one that half surrounds their country. Their land is full of bridges and embankments, and engineering works of all sorts, showing a power of cutting stone and granite, and a science of building, hardly surpassed by even the Egyptians themselves. All these great works are wholly devoid of either architectural design or ornament. In India such works would have been rendered ten times more admirable for their art than for their mass or extent. Here, however they may subserve to their utilitarian purpose—this aim gained, no æsthetic beauty is either sought for or attained.

This certainly does not arise from inability, for no people on earth carve granite with such facility and precision as the Chinese, not even excepting the inhabitants of southern India; and nowhere is skilled labour so cheap, and time so little thought of, as in China. Hence the absence of art must arise from want of taste, not want of power. The

truth seems to be, that they are a people naturally excelling in constructive talent, and in all technic arts, but wholly devoid of either æsthetic feeling or desire to share in that higher class of human utterance.

This national idiosyncracy is no doubt the real fundamental cause of this absence of architectural remains. Other causes may be assigned which contributed to the same result. In the first place, the Chinese never had either a dominant priesthood or a hereditary nobility. The absence of the former class is a very important consideration, because, in all countries where architecture has been carried to anything like perfection, it is to sacred art that it owes its highest inspiration, and sacred art is never so strongly developed as under the influence of a powerful and splendid hierarchy. Again, religious and sectarian zeal is often a strong stimulus to sacred architecture, and this is entirely wanting in this remarkable people. Though the Chinese are bigoted to a greater extent than we can well conceive in all political matters, they are more tolerant than any other nation we know of in all matters concerning religion. At the present moment three great religious sects divide the empire nearly equally between them. For though Buddhism is the religion of the reigning family, and perhaps numbers more followers than either of the other two, still the followers of the doctrines of Confucius, the contemporary and rival of Sakya Sinha, are a more purely Chinese sect than the other, and hold an equal place in public estimation; while, at the present time, the sect of Laou Tse, or the Doctors of Reason, is more fashionable, and certainly more progressive, than the others. Christianity, too, might at one time have encroached largely on either of these, and been a very prevalent religion in this tolerant empire, had the Jesuits and Dominicans understood that the condition of religious tolerance here is a total abstinence from interference in political matters. This, however, the Roman Catholic priesthood never could be brought to understand; hence their expulsion from the realm, and the proscription of their faith, which otherwise would not only have been tolerated like all others, but have bid fair to find more extensive favour than any. This toleration is highly laudable in one point of view; but the want of fervour and energy from which it arises is fatal to any great exertions for the honour of religion.

In the same manner the want of an hereditary nobility, and indeed of any strong family pride, is equally unfavourable to domestic architecture of a durable description. At a man's death his property is generally divided equally among his children. Consequently the wealthiest men do not build palaces calculated to last longer than for their own lives. The royal palaces are merely somewhat larger and more splendid than those of the mandarins, but the same in character and erected for the same purposes.

There is no country where property is so secure as it is in China. Private feuds and private wars are unknown; foreign invasion has been practically impossible and little dreaded. Hence they have none of

those fortalices, or fortified mansions, which by their mass and solidity give such a marked character to a certain class of domestic edifices in our own country. Equality, peace, and toleration, are blessings whose value it would be difficult to over-estimate; but on the dead though pleasing level where they exist, it is in vain we look for the rugged sublimity of the mountain, or the terrific grandeur of the storm. The Chinese have chosen the humbler path of life, and with singular success. Considering their number, there is not perhaps a more industrious or happier people on the face of the globe; but they are at the same time singularly deficient in every element of greatness, either political or artistic.

Notwithstanding all this, it certainly is curious to find the oldest civilized people now existing on the face of the globe wholly without any monuments to record the past, or any desire to convey to posterity a worthy idea of their present greatness. It is no less remarkable to find the most populous of nations, and a nation in which millions are always seeking employment, never thinking of any of those higher modes of expression which would serve as a means of multiplying occupation, and of elevating while it is feeding the masses; and still more startling to find wealth, such as the Chinese possess, never invested in self-glorification, by individuals erecting for themselves monuments which shall astonish their contemporaries, and hand down their names to posterity.

It has been said that Chinese architecture is a very barren subject. In one respect, however, it is instructive, as the Chinese are the only people who now employ polychromy as an essential part of their architecture; so much so, that colour is with them far more essential than form; and certainly the result is so singularly pleasing and satisfactory, that for the lower grades of art it can hardly be doubted but that it should always be so. It is almost as certain that, for the higher grades of art, colour, though most valuable as an accessory, is incapable of the same lofty power of expression which form conveys to the human mind.

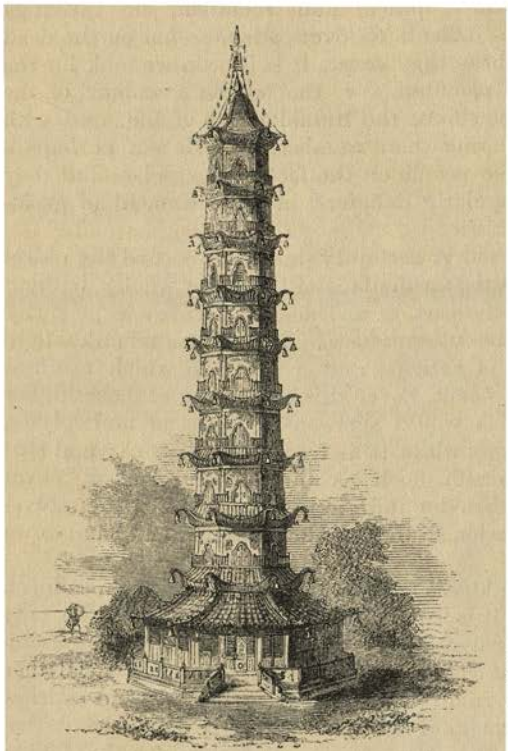
PAGODAS.

The only buildings in China that really deserve to be classed as architectural objects are the 9-storied pagodas, or *Taas* as they are more properly called, which form such conspicuous and characteristic objects in every view of Chinese scenery. It has been before stated[1] that these *taas* are in fact only exaggerated *tees* or spires; and, without going further, the illustrations of this work alone are nearly sufficient to trace them back to their origin. In woodcut No. 14, for instance, we have a 3-storied tee, not very dissimilar from a Chinese example. Woodcut No. 15 shows one with 7 such rims, and the 9-storied tower at Chittore (woodcut No. 56) brings us so near the Chinese pagodas that further proof seems almost superfluous.

Of those now known to exist in China, by far the finest, as well as

[1] See p. 21.

the best known, is the celebrated porcelain tower at Nankin. Commenced in the year 1412, and finished in 1431, it was erected as a monument of gratitude to an empress of the Ming family, and is now in consequence generally called the Temple of Gratitude. It is octagonal in form, 236 ft. in height, of which, however, about 30 ft. must be deducted for the iron spire which surmounts it, leaving little more than 200 ft for the elevation of the building, or about the height of the Monument of London. From the summit of the spire 8 chains depend, to each of which are attached 9 bells, and a bell is also attached to each angle of the lower roofs, making 144 bells in all, which, when tinkling in harmony to the evening breeze, must produce an effect as singular as pleasing. It is not, however, either to its dimensions or its bells that the tower owes its celebrity, but to the coating of porcelain which covers its brick walls, as well as the upper and under sides of the projecting roofs, which mark the division of each story. This produces a brilliancy of effect which is totally lost in all the representations of it yet published, but which is in fact the class of ornament on which the architect almost wholly relied for producing the effect he desired, and without which it is a mere skeleton of a design.



87. Porcelain Tower, Nankin.

Another celebrated pagoda is that known as 'Second Bar Pagoda,' on the Canton river. It is a pillar of victory, erected to commemorate a naval victory which the Chinese claim to have gained near the spot. It is in design nearly identical with that last described, but of smaller dimensions, and now fast falling to ruin. Besides these, almost every town of importance in China possesses one or more such structures, differing in dimensions and in the greater or less richness of their ornaments, but so like one another in design that it is impossible from such drawings as have been published to make out anything like a sequence or even a difference; they must therefore, with

our present knowledge, be regarded as exactly similar to one another.

Besides these great towers, however, there are many of only 3 or 7 stories, and of very small dimensions, but, whatever their height or size, the same design runs through them all.

It is extremely difficult to form a correct estimate of the artistic merits of these towers. Anything so original and so national must be interesting from that circumstance alone, and it seems almost impossible to build anything in a tower-like form of great height, whether as a steeple, a minar, or a pagoda, which shall not form a pleasing object even from its salience and aspiring character alone, without any real artistic merit in itself. Besides these qualifications, I cannot but think that the tapering octagonal form, the boldly-marked divisions, the domical roof, and general consistence in design and ornament, of these towers, entitle them to rank tolerably high among the tower-like buildings of the world.

PAILOOS.

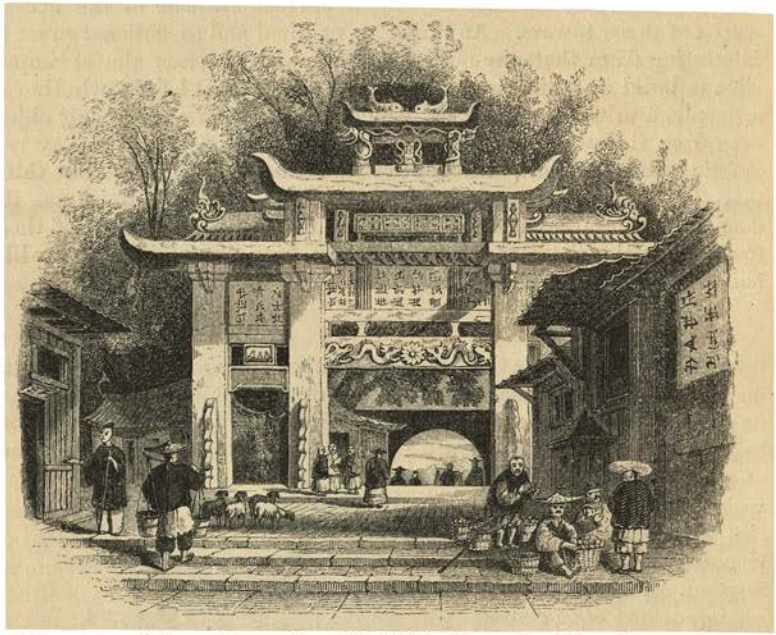
The *Pailoos*, or, as they are commonly but erroneously called, triumphal arches, form another object of Chinese architecture, which, from its constant recurrence in views of Chinese scenery, is almost as familiar to us as the pagoda. These are, in fact, monuments to deceased persons of distinction, generally of widows who have not married a second time, or of virgins who have died unmarried. The smaller and less important ones consist merely of two upright posts of wood or granite, supporting a flat board with an inscription,[1] like, both in purpose and design, to the wooden rails which are used as substitutes for tombstones in some districts of England.

88. Pailoo near Canton. From a sketch by the Author.

The more important *Pailoos* have three openings, surmounted by several boards with more or less ornament and carving. Sometimes they are wholly of wood: in others no material is used but stone, generally granite; and these two materials are combined in various proportions in other examples. Sometimes they are raised on platforms, as in the annexed example, from a

[1] Gutzlaff, 'China Opened,' vol. ii.

peculiarly graceful one near Canton; at other times they are placed on the ground, and even across roads, so as to form archways, if so they may be called, though certainly not triumphal ones. One of the most solid examples yet published is one forming the gate, or at least spanning the entrance, of the city of Amoy.



89. Gateway at Amoy. From Fisher's China Illustrated, vol. ii. p. 69.

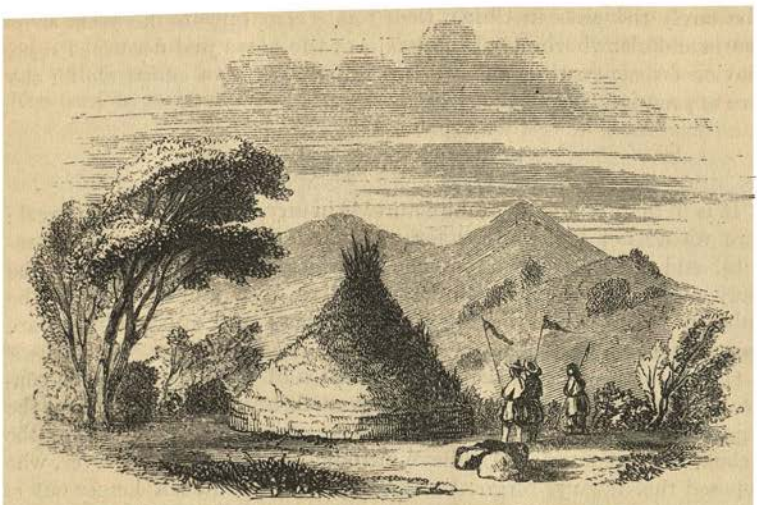
Like the towers, they trace their origin back to India, the gateways of the Sanchi tope[1] (woodcut 5) being the finest examples of a *pailoo* in existence; though whether used for the same purpose as that to which they are applied by the Chinese is not quite clear.

Tombs.

Like all people of Tartar origin, one of the most remarkable characteristics of the Chinese is their reverence for the dead, or, as it is usually called, their ancestral worship. In consequence of this, their tombs are not only objects of care, but have frequently more ornament bestowed upon them than graces the dwellings of the living.

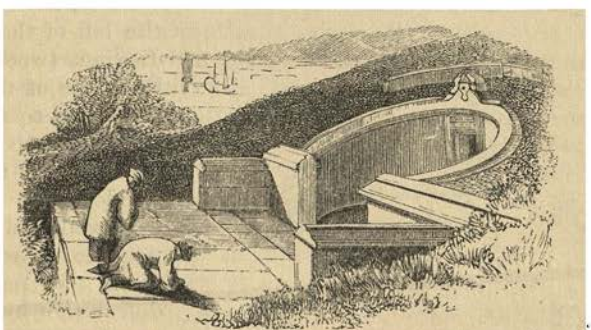
Their tombs are of different kinds; frequently they are merely conical mounds of earth, with a circle of stones round their base, like those of the Etruscans or ancient Greeks, as may be seen from the annexed woodcut (No. 90), borrowed from Fortune's 'China'—which would serve as well for a restoration of those of Tarquinia or Vulci. More generally they are of a hemispherical shape, surmounted with a

[1] Drawn in detail on the title-page of the author's Illustrations of Indian Architecture.



90. Chinese Grave. From Fortune's Wanderings in China.

spire, not unlike the Indian and Ceylonese examples, but still with a physiognomy peculiarly Chinese. The most common arrangement is that of a horseshoe-shaped platform, cut out of the side of a hill. It consequently has a high back, in which is the entrance to the tomb, and slopes off to nothing at the entrance to the horseshoe, where the wall generally terminates with two lions or dragons, or some fantastic ornament common to Chinese architecture. When the tomb is situated, as is generally the case, on a hill-side, this arrangement is not only



91. Chinese Tomb. From Fortune's Wanderings in China.

appropriate, but elegant. When the same thing is imitated on a plain, it is singular, misplaced, and unintelligible. Many of the tombs are built of granite, finely polished, and carved with a profusion of labour that makes us regret that the people who can do such things should have so great a predilection for ephemeral wooden structures, when capable of employing the most durable materials with such facility.

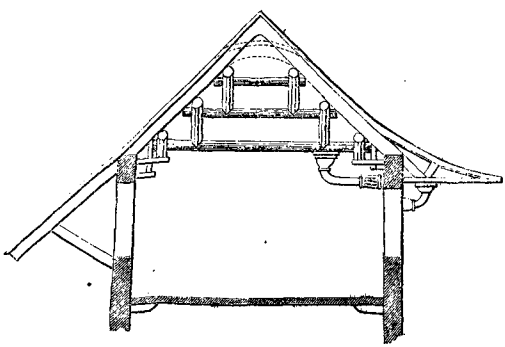
When the rock is suitable for the purpose, which, however, seems

to be rarely the case in China, their tombs are cut in the rock, as in Etruria and elsewhere; and the tombs of the class just described seem a device for converting an ordinary hill-side into a substitute for the more appropriate situation.

Domestic Architecture.

It is in their domestic architecture, if in any, that the Chinese excel; there we do not look either for monumental grandeur or for durability, and it is almost impossible to resist being captivated by the gaiety and brilliancy of a Chinese dwelling of the first class, and the exuberant richness and beauty of the carvings and ornaments that are heaped on every part of it.

One of the most remarkable peculiarities of their houses is the concave form of roof which is almost universal, and which writers on the subject have generally referred to as a reminiscence of the tent of the Tartars, who are supposed to have introduced it. They, however, who proposed this theory, forgot that the Chinese have been longer out of tents, and know less of them, than any other people now on the face of the globe. The Tartar conquest, like our Norman one, has long been a fusion rather than a subjection, and in China at least does not seem to have produced the smallest visible effect on the manners or customs of the original inhabitants. Be this as it may, the form in question arose from a constructive exigence, which others would do well to imitate, and in this manner. In a country like China, where very heavy rains fall at one season of the year, tiled roofs, such as they almost universally use, require a high pitch to carry off the water; but so bright a sunshine as at another season of the year glares down upon them, requires shade to their walls and windows. If, however, as on the left of the annexed diagram (woodcut 92), the slope of the roof is continued so far out as to be effective for the last purpose, the upper windows are too much darkened, and it is impossible to see out of them. To remedy this defect, the Chinese carry out their eaves almost horizontally from the face of the walls, where a leak becomes of slight importance; and then, to break the awkward angle caused by the meeting of these two slopes, they ease it off with a hollow curve, which not only answers the double purpose of the roof more effectually, but produces what the Chinese think—and rightly—the most pleasing form of roof.



92. Diagram of Chinese construction.

The only parts of such a roof that admit of decoration by carving are evidently either the central or angular ridges; and here they exaggerate their favourite hollow curve to an extent unpleasing to a European eye—the angles being virtually turned back, in some instances, and the ridge being also ornamented by upturned ornaments at its ends, to an extent we cannot reconcile with our notions; nor indeed is it possible we should, when they are overloaded with grotesque ornaments to the extent too often found.

Another peculiarity that gives so local a character to their architecture is their mode of framing a roof, so unlike that used by any other people. This arises from the timber they possess most easily available for such a purpose being a small pine, found everywhere, in the south at least, which has the peculiarity of being soft and spongy in the inside; but the outer rims of wood, just under the bark, retain their hardness and strength; so that practically it is a hollow wooden cylinder; and if the carpenter were to attempt to square it, so as to form a framing as we do, it would fall to pieces; but merely cleaned and used whole, it is a very strong and durable building material, though one which it requires all a Chinaman's ingenuity and neatness to frame together with sufficient rigidity for the purposes of a roof.

The uprights which support these roofs are generally formed of the same wood, though not unfrequently they are granite posts—they cannot be called pillars—of the same dimensions, and strengthened, or rather steadied, by transverse pieces of wood, the space between which and the roof is generally filled with open-work carving, so as to form a species of frieze.

The roof is usually constructed, as shown in diagram No. 92, by using 3 or 4 transverse pieces or tie-beams, one over the other, and supporting the ends of each beam on that below it by means of a framed piece of a different class of wood. By this method, though it may look unscientific to our eyes, they make up a framing that resists the strongest winds uninjured. Sometimes, as shown in the dotted lines of the same woodcut, they carry the curve across the top of the roof; but when this is done they are obliged to have recourse to metal roofing, or to tiles of a greater length than are usually found or easily made.

As before remarked, however, it is not so much on its forms that Chinese architecture depends as on its colours—the pillars being generally painted red, the friezes and open work green; blue marks the floors and stronger lines, and gilding is used profusely everywhere. Whether this would or would not improve a finer or more solid style of art may admit of doubt; but it is certainly remarkably pleasing in China, and singularly appropriate to the architecture we have been describing; and grouped as these buildings usually are around garden courts, filled with the gayest flowers, and adorned with rock-work and fountains more fantastic than the buildings themselves, the fancy may easily be charmed with the result, though taste forbids us to approve of the details.

Temples.

I have put off to the last speaking of the temples of the Chinese, because they partake far more of domestic architecture than in almost any other country. They possess no sacred forms which distinguish them at first sight from private edifices, and scarcely rise in dignity beyond the mansions of the great.

One of the largest temples to which Europeans have had access is that of Honan, opposite Canton. It consists of an oblong enclosure of some extent, both sides of which are occupied by the dwellings and gardens of the priests, which have nothing to distinguish them from the houses outside. In the centre, however, of the end facing the river, is a gateway of some pretension, which leads to a hall of moderate dimensions, and through this to a second and a third, the last being larger and more richly ornamented than either of the other two. This inner hall contains images of the three precious Buddhas in white marble, and also a small model of a dagobah of the same material, and with a number of offerings and images strewed about; and the painting and carving with which it is adorned make up a tolerably rich effect, but far more resembling and more appropriate for a hall in a mansion [1] than a temple dedicated to worship. The small temple at Macao, represented in the annexed woodcut, has more pretension to architectural beauty, though its dimensions are very inferior; but no Chinese temple, so far as is known, is either larger than this of Honan, or possesses anything of that monumental character which we usually

93. Temple at Macao. From a sketch by the Author.

[1] When Lord Amherst returned from Pekin he was lodged in this building. The images and all the sacred vessels were removed for the occasion, and the room was used as the dining-room of the Embassy.

find in all those edifices which other nations have dedicated to the honour of the Supreme Being.

When we come to know more of China than at present, it is possible that this opinion may to some extent be modified; but certainly no views published by any of those who have traversed the country, nothing that has been written, and no Chinese drawings, of which abundance exist, lead us to suppose that anything except the pagodas, pailoos, and tombs, have ever been erected by them at all worthy of notice as architectural subjects.

Indeed, the two purely Chinese sects seem to be wholly without temples of any sort, and their example seems to have influenced the Buddhists to such an extent as to prevent their attempting anything at all monumental; and there seems no reason for believing that anything better than these domestic-looking *viharas*—half temple, half monastery—exists in any part of the country.

The same remarks apply to Japan and the other large and populous islands around China. Domestic architecture is brilliant and cheerful in them all, but ephemeral; and none of them possess any monuments designed to last beyond the generation that erected them.

Their engineering works have been much extolled by some writers, but they have no more claim to praise as works of science than these buildings have as works of art. Their canals, it is true, are extensive; but with 300 millions of inhabitants this is small praise, and their construction is most unscientific. Their bridges, too, are sometimes of great length, but generally made up of a series of small arches constructed on the horizontal principle, as nine-tenths of the bridges in China are, and consequently narrow and unstable. When they do use the true arch, it is timidly, and without much knowledge of its true principles.

However admirable and ingenious therefore the Chinese may be, and seem always to have been, in the minor arts—such as carving in wood and ivory, the manufacture of vessels of porcelain and bronze, and in all that relates to silk and cotton manufactures—it still must be admitted that they never rose above the rank of manufacturers, and that poetry of any grade is wholly unfamiliar to them; indeed, that they seem incapable of it in any form, either written or structural.

CHAPTER II.

CENTRAL AMERICA.

CONTENTS.

Historical Notice — Central American style — Temples — Palaces — Palenque — Uxmal.

CHRONOLOGY.

	DATES.		DATES.
Toltecs arrived in Anahuac	A.D. 648	Founded Mexico	A.D. 1125
Abandoned the country	1051	Almitzotl conquered Guatemala	beginning of 16th century.
Chichemecas arrived	1170		
Acolhuans arrived, about	1200	Spaniards arrived	1519
Mexicans reached Tula	1196		

Were it possible to write the History of Architecture in Mexico with the same certainty that we can now write that of almost every other country in the world, it would be instructive from the unity and completeness of the subject. It would be a history of an art wholly indigenous and original, uninfluenced by any foreign style, and consequently illustrating, in a close and compact space, the whole of those processes by which mankind are enabled to elaborate an art out of the simplest elements.

This is hardly the case with any of the styles of the old world, at least after we leave the Egyptian, whose origin is lost in the mists of antiquity. All other styles were influenced, more or less directly, by its forms, so that we can easily trace the influence of the Hall at Karnac in all subsequent buildings. The Indian styles, it is true, form a group apart, but not so completely distinct as the Mexican; and the variety of their forms, and the want of unison in the parts, prevent their affording complete illustration of an art invented and completed wholly without the introduction of any foreign element.

Our whole knowledge of the early history of the inhabitants of Central America is derived from the annals of two tribes which, by their own account, in which there is nothing improbable, occupied Mexico about the 12th century of our era. These tribes, the Chichemecas and Astecs, came from the north, and were probably of the same race with the red Indians. The country which they took possession of was previously inhabited by the Toltecs, belonging to a race who had in all probability occupied the provinces of Central America from time immemorial, and who had certainly attained at the time we are speaking

of to a considerable degree of civilization, and made no mean progress in many of the useful arts.

It is recorded that the Toltecs abandoned the valley about the 10th century, in consequence of their numbers being greatly reduced by a severe famine and by disease. Nothing further is related of this tribe, but there can be little doubt that some remnant of it afterwards mixed with the invaders, and imparted to them many arts then unknown to them, and of which their more northern brethren still remain ignorant. Under these favourable circumstances of climate and aggregation, the conquerors of Mexico reached a degree of civilization which the red men never attained in their native plains.

The valley of Mexico, of which alone we have any record, is a province about twice the size of Lancashire, and one-third of it is covered with water. In process of time it became subject to three petty kings who carried on perpetual wars one with another. It was not until immediately before the conquest of the country by the Spaniards that these three kings, tired of their ruinous wars, joined their forces together, and, thus combined, proved more than a match for any of the surrounding states. They spread their arms and influence to the Mexican Gulf, penetrated to the shores of the Pacific, and on one occasion are even said to have crossed the Isthmus of Tethuantepec, and reached the confines of Guatemala. These last expeditions seem to have been undertaken merely to obtain prisoners for their horrid rites of human sacrifice, of which they were becoming passionately fond; and they made no settlement in these countries sufficient to influence either their arts or institutions in any way. Shortly after this the conquest of the Spaniards under Cortes put an end to the kingdom and power of the Astecs for ever.

All this, however, refers wholly to the Astecs in the valley of Mexico; and all the affinities that have been traced between them and their northern neighbours apply to them, and them only. The principal remains of architecture in Central America are not found in Mexico Proper, but in districts in which the Astecs never obtained a permanent footing, in Yucatan, Chiapas, and Guatemala. They are evidently works of an earlier and far more highly civilised race than that of the invaders—in short, of precisely such a race as the Toltecs are recorded to have been. Thus we have a striking concurrence of evidence—that of the Mexican annals, and of the ruins themselves—proving that, previous to the arrival of the Red Indians, these countries were inhabited by a people possessing a considerable degree of civilisation.

Were it not from what we learn from the description of the Spaniards and earlier travellers, we should now be utterly ignorant of the arts of the Mexicans themselves, all that they built having perished from the lapse of time, or having been destroyed by the savage bigotry of the invaders. Though these descriptions are often inflated and seldom intelligible, they suffice to prove that the Mexicans had learnt from their predecessors the art of building, and erected monuments capable of exciting the amazement of those who were familiar

with the cathedrals of Toledo and Seville, and knew well the palaces and monasteries of ancient Spain.

We must not ascribe even the great pyramid of Cholula or the temple of Tlascala to the Mexicans. These cities, though so near to the Mexican capital, were inhabited by a people of a different race, and who practised their own arts. Beyond the Mexican boundaries there exists a country full of ruins of the most interesting character, and in a state of singularly perfect preservation, which, when properly explored, will do more to elucidate the history and to illustrate the arts of this mysterious people than anything that has yet come to light; but much remains to be done before any satisfactory result can be obtained from the materials so unexpectedly afforded us. The country has been visited by very few travellers at all capable of judging of what they saw. The explorations undertaken by Mr. Stephens,[1] and the publication of the beautiful drawings of his companion, Mr. Catherwood, first conveyed a just idea of the extent and character of these monuments; neither, however, of these gentlemen were familiar with the rules of architectural criticism, nor capable, consequently, of properly arranging the materials they were collecting with such zeal and talent; and it still remains for some one who has the knowledge and the energy requisite for such a task to complete the work they have so nobly begun, and to read for us the history of Central America, and the long-forgotten Toltecs, as written by them in their monuments.

No one could be long among these buildings, provided he was familiar with the styles of other parts of the world, without perceiving a sequence among them, and, when once this is done, the problem is half solved. We may never be able to ascertain at what exact date the earliest building was erected, nor when the last was completed: but we may be able to trace the steps by which the style arose, to judge how far it was capable of further development, and also, perhaps, to learn the origin and history of the people to whom it belonged.

These last are the forms of the problem that have been hitherto most carefully and zealously investigated, though with singularly little success. Because this people built pyramids and engraved hieroglyphics, it is conjectured that they came from Egypt. Their temples are supposed to be copies of the temple of Belus at Babylon. Lord Kingsborough's great work was undertaken to prove that the temple of Palenque was built on the model of Solomon's, and, consequently, that the people were Jews. Certain astronomical similarities have been assumed as identifying them with the Moguls, and so on *ad infinitum*. But there is not one of these supposed links of evidence which can be relied upon when we consider what very natural shapes to be adopted by a rude people are those of the rectangular pyramid of stone or brick and the conical mound of earth. The same may be said of picture-writing as a mode

[1] Previous to Mr. Stephens's book the ruins only of Palenque were known through Lord Kingsborough's work, and some others had been imperfectly sketched.

of expressing the thoughts. There may no doubt be certain affinities with the old world. Influences may have come by Behring's Straits, or across the ocean. The only connection that can be traced with any certainty is with the Polynesian islanders. The very variety of the theories just mentioned almost proves that none can be made out at all satisfactorily. On the whole we may safely exclude all such considerations, and treat of the architecture of Central America as complete in itself, and unconnected with any other known style.

CENTRAL AMERICAN ARCHITECTURE.

Owing to our imperfect knowledge of the subject, it is not easy to define the various classes of buildings into which the examples we possess should be divided. As in almost all countries, however, the principal are the Teocallis or houses of God.

These are always pyramids, square in plan, and generally formed into two, three, or more stories or terraces, with a platform on the top, on which the temple, properly so called, always stands.

Next to these are the palaces, or the houses of kings, which are extremely similar to the temples, except in the number and extent of the chambers they contain, and also that, generally, the pyramids on which they stand are lower, and much longer in one direction than in the other.

A third class are tumuli or mounds of earth, with sepulchral chambers, generally above ground, the openings of which are visible outside; their outline seems to have been merely that of a mound of earth with no buildings on the top.

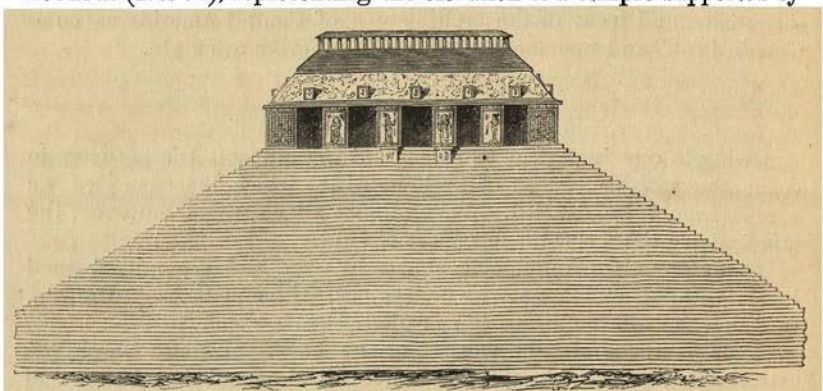
Besides these there are gateways apparently more intended for display than defence, city walls, wells, and various works of public utility, and great monolithic idols, which belong more to the province of architecture than to anything that can be styled imitative sculpture.

As specimens of architecture, however, in reality only the two first deserve notice in a work like the present.

Of the first class, by far the largest and most celebrated is the pyramid of Cholula, near Mexico, said to have been erected long before the arrival of the Astecs. It is now a mere mound of ill-built bricks and rubbish. In plan it measures 1440 ft. each way, and the height of its 4 terraces is 177 ft. Its area, therefore, was nearly four times that of the largest of the Egyptian pyramids, though its height is not much more than one-third. When we come to consider the material and skill required for the erection of the two, no comparison can be made between this rude mound of the Americans and the imperishable structures of the Egyptian kings. On the large platform on its summit now stands a church dedicated to the Virgin, and no remains of ancient architectural ornament exist, either in or about the place, by which its style or affinities can be guessed. The same remarks apply to the temples of Tezcuco and Teotihuacan, and to all the buildings in the Mexican Valley.

In Yucatan the case is widely different. The pyramids there are

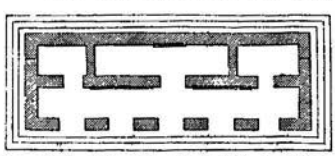
not generally in terraces, but rise, at an angle of about 45°, to the level of the platform on which the temple stands; and a magnificent unbroken flight of steps leads from the base of the building to the summit. Almost all these retain more or less of the remains of architectural magnificence that once adorned their summits. The annexed woodcut (No. 94), representing the elevation of a temple supported by



94. Elevation of Teocalli at Palenque. Scale 50 ft. to an inch.

a pyramid at Palenque, with the plan of the temple (woodcut No. 95), will give a good general idea of their form. The pyramid on which it stands is about 280 ft. square, and 60 ft. in height: on the top of this stands the temple, 76 ft. wide in front, and 25 ft. deep, ornamented in stucco with bassi-rilievi of better execution than is usually found in these parts, and with large hieroglyphical tablets, whose decipherment, were it possible, would probably reveal to us much of the history of these buildings.

The roof is formed by approaching courses of stone meeting at the summit, and following the same outline externally, with curious projections on the outside, like dormer windows, but meant apparently either for ornament or to support small idols, or for some similar purpose.



95. Plan of Temple. Scale 50 ft. to an inch.

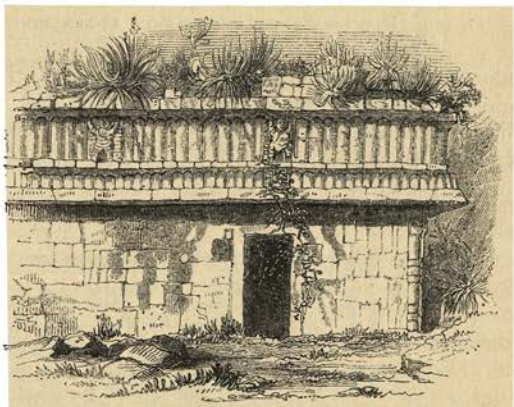
The other temples found in Yucatan differ but little from this one, except in size, and, architecturally speaking, are less interesting than the palaces—the splendour of the temple consisting in the size of its pyramid, to which the superstructure is entirely subordinate: in the palace, on the other hand, the pyramid is entirely subordinate to the building it supports, forming merely an appropriate and convenient pedestal, just sufficient to give it a proper degree of architectural effect.

In speaking of the palaces it would be most important, and add very much to the interest of the description, if some classification could be made as to their relative age. The absence of all traces of history makes this extremely difficult, and the only mode that now

suggests itself is to assume that those buildings which show the greatest similarity to wooden constructions in their details are the oldest, and that those in which this peculiarity cannot be traced are the more modern.

This at least is certainly the case in all other countries of the world where timber fit for building purposes can be procured: there men inevitably use the lighter and more easily worked vegetable material long before they venture on the more durable, but far more expensive mineral substance, which ultimately supersedes it to so great an extent. Even in Egypt, in the age of the pyramid-builders, the ornamental architecture is copied in all its details from wooden constructions. In Greece, when the art reached its second stage, the base is essentially stone, and the upper part only copied in stone from the earlier wooden forms: and so it was apparently in Mexico; the lower part of the buildings is essentially massive stone-work, the upper part is copied from forms and carvings that must originally have been executed in wood, and are now repeated in stone.

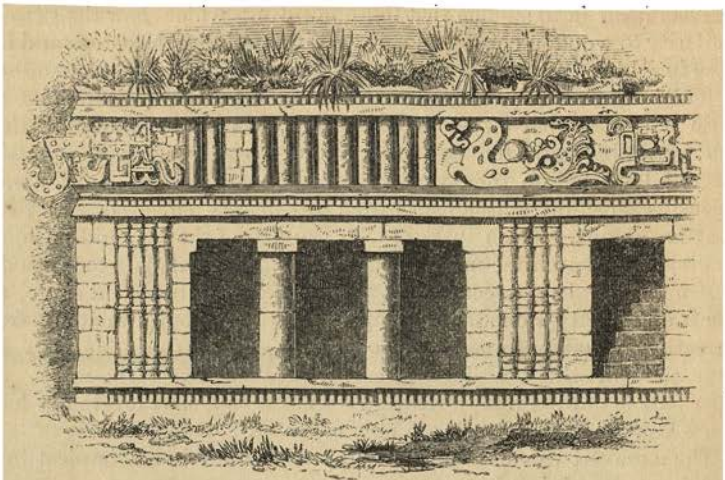
The annexed woodcut, for instance, represents in its simplest form what is repeated in almost all these buildings—a stone basement with square doorways, but without windows, surmounted by a superstructure evidently a direct copy of woodwork, and forming part of the construction of the roof.



96. Elevation of Building at Chunjuju. From a drawing by F. Catherwood.

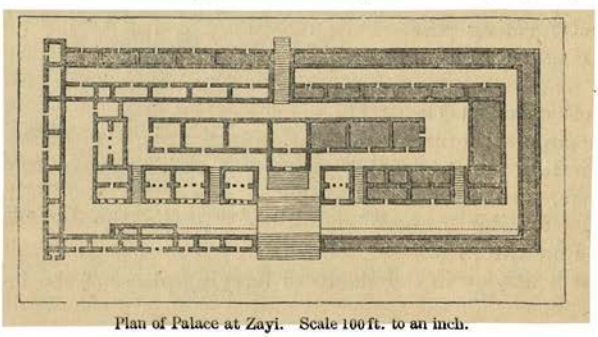
In most cases in Yucatan the superstructure is elaborately carved with masks, scrolls, and carvings, similar to those seen on the prows of the war-boats, or in the Moraïs or burying-places of the Polynesian islanders.

Sometimes pillars are used, and the wooden construction is carried even lower down, though mixed in that case with parts of essentially lithic forms. Barring the monstrosity of the carvings, there is often, as in the palace at Zayi (woodcut No. 97), a degree of elegance in the design by no means to be despised, more especially when, as in this instance, the building rises in a pyramidal form on three terraces, the one within and above the other, the lowest, as shown in the plan (woodcut No. 98), being 265 ft. in length, by 120 ft. in width. This, though far from being the largest of these palaces, is one of the most remarkable, as its terraces, instead of being mere flights of steps, all present architectural façades, rising one above the other. The upper and central tiers of buildings may possibly have been a many-celled temple, and the lower apartments appropriated to the priests, but it is



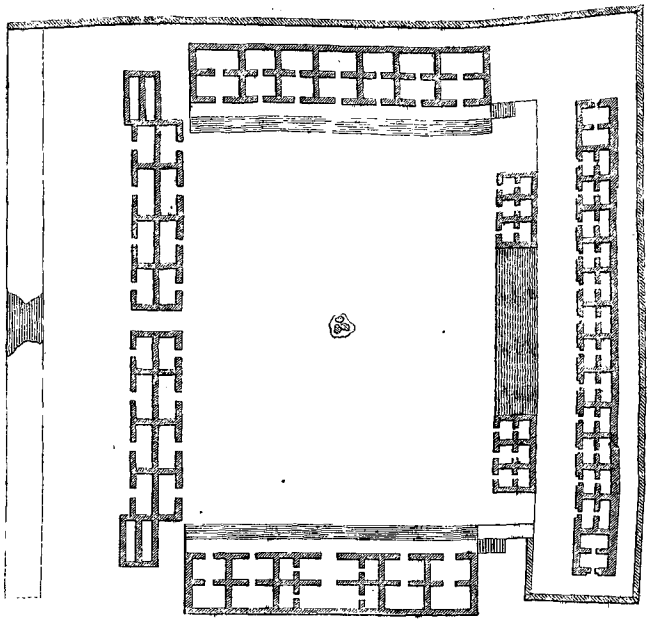
97. Elevation of part of Palace at Zayi. From a drawing by F. Catherwood.

more probable that they were all palaces, the residences of temporal chiefs, inasmuch as at Uxmal a pyramidal temple is attached to the building called the Casa del Gubernador, which is extremely similar to this, though on a still larger and more ornate scale. There are other instances also of the palace and temple standing together.



98. Plan of Palace at Zayi. Scale 100 ft. to an inch.

Sometimes, instead of the buildings standing within and above each other, as in the last example, they are arranged around a court-yard, as in that called the Casa de las Monjas at Uxmal (woodcut No. 99), one of the most remarkable buildings in Central America, for its size, as well as from the elaborateness of its decorations. It is raised on three low terraces, aggregating 20 ft. in height. The one to the south, 279 ft. long, is pierced by a triangular-headed gateway, 10 ft. 8 in. wide, leading to a court-yard, measuring upwards of 200 ft. each way, and surrounded on all sides by buildings, as shown in the plan; which, though only one story in height, are, considering their size and the elaborateness of their decorations, one of the most remarkable groups of buildings in the world.



99. Casa de las Monjas, Uxmal. Scale 100 ft. to an inch.

In the same city of Uxmal is another building, called the Casa del Gubernador, somewhat similar to the principal of the three edifices composing the Casa de las Monjas, but larger, and even more elaborate in its decorations. It stands alone, however, with only a temple attached unsymmetrically to one angle of it.

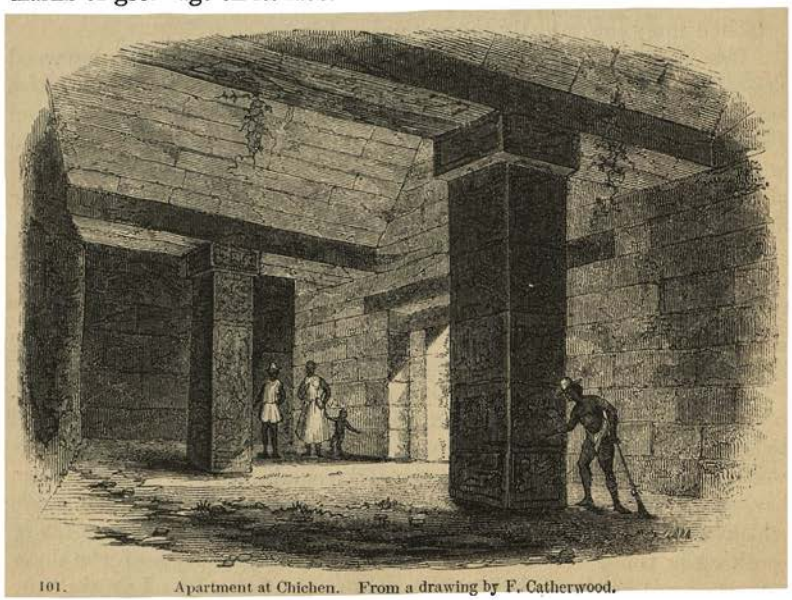
Besides these, the works of Messrs. Stephens and Catherwood describe and represent the remains of at least a dozen other cities scarcely less splendid and wonderful than Uxmal itself. The ruins of Palenque have long been known in this country from the splendid work of Lord Kingsborough, and those at Mitlan from Humboldt, and afterwards more fully from Lord Kingsborough's work. The latter are remarkable for a hall, whose roof was supported by pillars of porphyry, at one time supposed to be the only pillars to be found in that country. But, as already shown at Zayi and elsewhere, they are frequently used.

With regard to construction, as above remarked, the style may be generally characterized as one remove from the original wooden construction of early times. No wooden buildings, or even wooden roofs, now remain, nor could any be expected to have resisted the effects of the climate; but many of the lintels of the doorways were formed by wooden beams, and some of these still remain, though most of them have perished, bringing down with them large portions of the walls which were supported by them. In other instances, and generally speaking in those that seem most modern, the upper parts of the doorways, as well as the roofs of the chambers, are formed by bringing the

courses nearer together till they meet in the centre, thus forming a horizontal arch, as it is called, precisely as the Etruscans and all the earlier tribes of Pelasgic race did in Europe at the dawn of its civilisation, and as is done in India to this day. This form is well shown in the annexed woodcut (100), representing a chamber in the Casa de las Monjas at Uxmal, 13 ft. wide. The upper part of the doorway on the right hand has fallen in, from its wooden lintel having decayed.

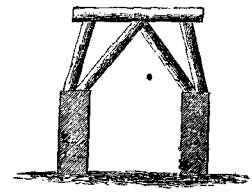
100. Interior of a Chamber, Uxmal. From a drawing by F. Catherwood.

A still more remarkable instance of the construction employed by the natives is shown in the woodcut (No. 101), representing a room in a temple at Chichen Itza in Yucatan. The room is 19 ft. 8 in. by 12 ft. 9 in.; in the centre of it stand two pillars of stone, supporting beams of sapote-wood, which also form the lintels of the door, and over these is the stone vaulting of the usual construction: the whole apparently still perfect and entire, though time-worn, and bearing the marks of great age on its face.



101. Apartment at Chichen. From a drawing by F. Catherwood.

When the roof was constructed entirely of wood, it probably partook very much of the same form, the horizontal beam being supported by two struts meeting at the centre, and framed up at the sides, which would at once account for the appearances shown in the woodcuts Nos. 100 and 101. It is also probable that both light and air were introduced above the walls, between the interstices of the wood-work; which is further confirmed by the strange erection on the top of the Casa at Palenque (woodcut No. 94), where the openings look very like the copy of a ventilator of some sort.



102. Diagram of Mexican construction.

It is of course impossible to ascribe any very remote antiquity to buildings containing so much wood in their construction, and erected in a climate so fatal to the durability of any class of buildings whatever. Indeed it is probable that many were erected immediately before the conquest of the country by the Spaniards; and it is possible, though not probable, that the age of some may extend as high as the Christian era. So far as we may venture to guess at their relative dates, I should be induced to assume the buildings at Palenque as the most modern, and those of Zayi as among the most ancient of the series; but it would require far more knowledge than can be obtained from such books as have been published to speak with anything like certainty on this point.

A far more tempting field of speculation, and one that every author who has treated of the subject has indulged in more or less, is to trace the similarities that exist between this style and that of Egypt, of Pelasgia or Assyria, of China, Mongolia, &c.; and certainly there are striking similarities to many of these: the essential differences are, however, on the other hand, so remarkable, that, though it is impossible to deny the coincidences, it is far safer, for the present at least, to ascribe them to the common instincts implanted by Nature in all the varieties of the human race, which lead all mankind, in certain climates and at a certain stage of civilization, to do the same thing in the same way, or nearly so, even without any teaching, or previous communication with those who have done so before.

CHAPTER III.

PERU.

CONTENTS.

Historical Notice — Titicaca — Tombs — Walls of Cuzco.

CHRONOLOGY.

Manco Capac . . . . . 13th century. | Conquest by Pizarro . . . . . A.D. 1534

Peru is situated geographically so near to Mexico, and the inhabitants of both countries had reached so nearly to the same grade of civilization at the time when the Spaniards first visited them and destroyed their native institutions, that we might naturally expect a very considerable similarity in their modes of building and styles of decoration. Nothing, however, can be further from the fact: indeed it would be difficult to conceive two people, however remotely situated from one another, whose styles of art differ so essentially as these two.

The Mexican buildings, as we have just seen, are characterized by the most inordinate exuberance of carving, derived probably, with many of the forms of their architecture, from wooden originals. Peru, on the other hand, is one of the very few countries known where timber appears to have been used in primitive times so sparingly that its traces are hardly discernible in subsequent construction; and, either from inability to devise or from having acquired no taste for such a mode of decoration, the sculptured forms are few and insignificant.

The material which the Peruvians seem to have used earliest was mud, and many walls of this substance, erected certainly before the Spanish conquest, still remain in a state of very tolerable preservation. The next improvement on this seems to have been a sort of rubble masonry or concrete: the last, a Cyclopean masonry, of great beauty and solidity. None of these forms, nor any of their derivatives, are found in Mexico: the climate would not permit of the use of the first—hardly of the second; and in all their buildings, even the earliest, the Mexicans seem to have known how to use stones carefully squared, and set with horizontal beds.

Another peculiarity which Peruvian art has in common with most of those derived from purely stone construction, is the sloping sides of the openings—a form invented on purpose to diminish the necessary size of the lintel. There are two discharging arches so constructed at Uxmal, but, so far as is known, none anywhere else; and no single opening of that class in the whole architectural province of Mexico.

The roofs and upper parts of the larger openings, on the contrary, almost universally slope in that country. In Peru the roofs are always flat, or domical, and the sides of the openings always straight lined.

These and many other peculiarities will be more apparent in what follows, but even as stated here they are sufficient to establish the entire difference of the two races, and to give those who have so easily assumed the Asiatic origin of the Toltecs and Astecs a second and more difficult problem to solve, in accounting for the origin of the Peruvians.

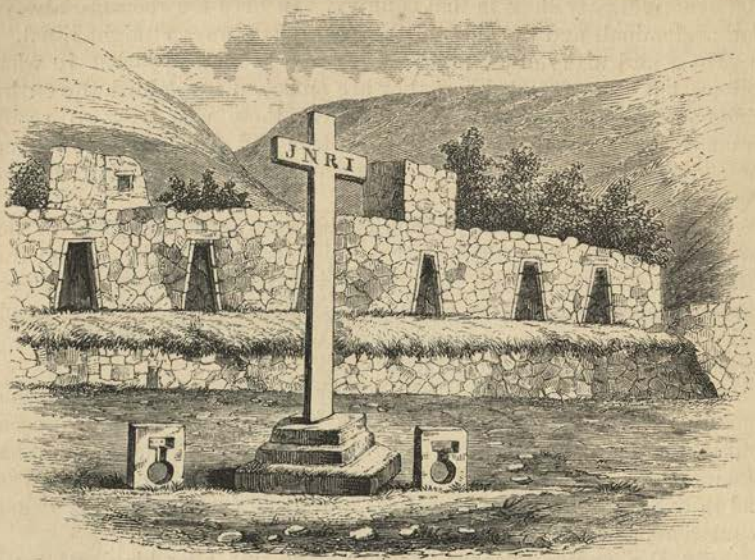
Besides this remarkable distinction between the architecture of the two countries, we have the negative evidence of their history and tradition, which make no mention of any intercourse between the Peruvians and any people to the northward. This, however, is not of much weight, as there are no accounts at all which go back so far as 3 centuries before the Spanish conquest.

At about that period it is fabled that a godlike man, Manco Capac, appeared with a divine consort on an island in the lake of Titicaca, journeying from whence they taught the rude and uncivilized inhabitants of the country to till the ground, to build houses and towns, and to live together in communities; and made for them such laws and regulations as were requisite for these purposes.

Like the Indian Bacchus, Manco Capac was after his death reverenced as a god, and his descendants, the Incas, were considered as of divine origin, and worshipped as children of the Sun, which was the great object of Peruvian adoration. At the time of the Spanish conquest the 12th descendant of Manco Capac was on the throne, but, his father having married as one of his wives a woman of the Indian race, the prestige of the purity of Inca blood was tarnished, and the country was torn by civil wars, which greatly facilitated the progress of the Spaniards in their conquests under the unscrupulous Pizarro.

In a country so deficient in history of any sort, and without a single building whose date can be fixed with certainty, it is of course impossible to write a history of its architecture; but a sequence can easily be made out, which is not the case in Mexico. By this means, if we are to confine the whole history to a period of 3 centuries, it is not difficult to fix approximately the date of any building we may find; and although it is more a question of masonry and construction than of architecture, properly so called, it is surprising what progress this rude people made in so short a time, and how they advanced from the rudest Cyclopean work to as perfect a class of masonry as is found in any part of the world.

Both from its style and the traditions attached to it, the oldest building in the country seems to be that called the house of Manco Capac, on an island in the lake of Titicaca. The part shown in the woodcut (No. 103) is curvilinear in form, standing on a low terrace, and surmounted by upper chambers, hardly deserving the name of towers. All the doorways have the sloping jambs, and the masonry is of rude, irregular polygonal blocks of no great size. Inside the wall are a number of small square chambers, lighted only from the doorway.



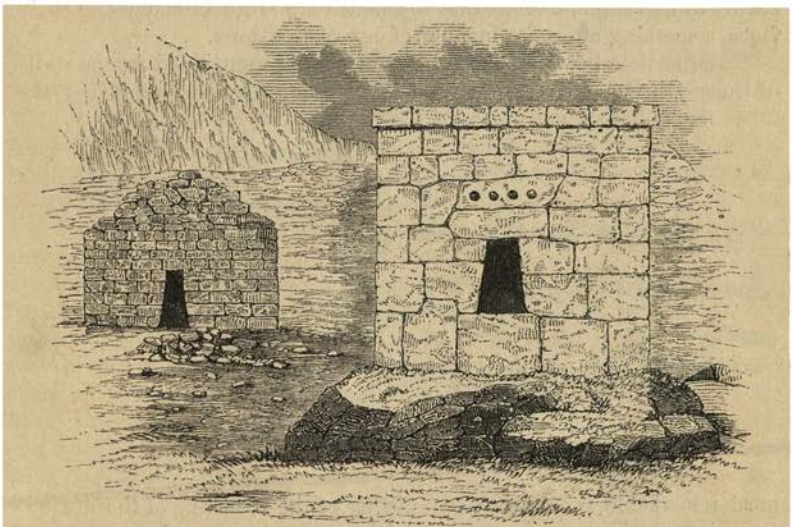
103. Ruins of House of Manco Capac, in Cuzco. J. B. Pentland, del.

104. House of the Virgins of the Sun. From a sketch by J. B. Pentland.

A more advanced specimen of building, though inferior in masonry, is the 2-storied edifice called the house of the Nuns, or of the Virgins of the Sun, in the same place (woodcut No. 104). It is nearly square in plan, though with low projecting wings on one side, and is divided into 12 small square rooms on the ground-floor, and as many similar rooms above them. Several of these chambers were surrounded by others, and those that had no doors externally had nothing like windows (except one with two slits in the upper story); and they must have been as dark as dungeons, unless the upper ones were lighted from the roof, which is by no means improbable. The most striking architectural features they possess are the doorways, which exactly resemble the Etruscan, both in shape and mode of decoration. We are able in this case to rely upon the accuracy of the representation, so that there can be no doubt of the close similarity.

Another building on the island of Coata, in the sacred lake of Titicaca, is raised on five low terraces, and surrounds three sides of a court-yard, its principal decoration being a range of doorways, some of them false ones, constructed with upright jambs, but contracted at the top by projecting courses of masonry, like inverted stairs, in this instance, however, only imitative, as the building is of rubble.

The masonry of the principal tomb represented in the woodcut (No. 105) may be taken as a fair specimen of the middle style of

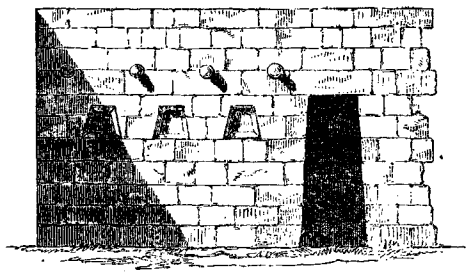


105. Peruvian Tombs.

masonry; less rude than that of the house of Manco Capac, but less perfect than that of many subsequent examples. It is square in plan—a rare form for a tomb in any part of the world—and flat-roofed. The sepulchral chamber occupies the base, and is covered by a floor, above which is the only opening. The other tomb in the background is likewise square, but differs from the first in being of better masonry, and

having been originally covered, apparently, with a dome-shaped roof either of clay or stucco. Some of these tombs are circular, though the square form seems more common, in those at least which have been noticed by Europeans.

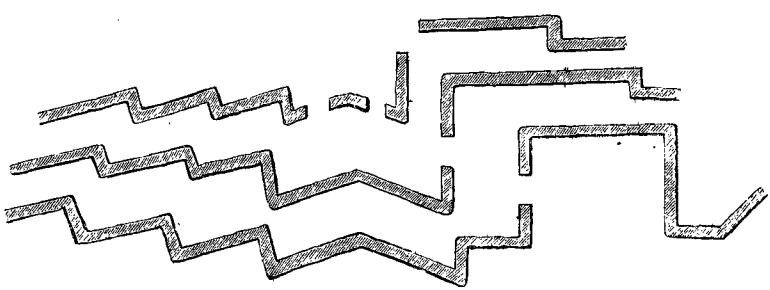
A specimen of the perfected masonry of the Peruvians is represented in the woodcut No. 106, of a portion of one of the Caravanserais, or *Tambos*, erected by the last Incas along the great road they made from their oldest capital, Cuzco, to Sinca. The road was itself perhaps the most extraordinary work of their race, being built of large blocks of hard stone, fitted together with the greatest nicety, and so well constructed as to remain entire to the present day in remote parts where uninjured by the hand of man.



106. Elevation of Wall of Tambos. From Humboldt's Atlas Pittoresque.

As will be observed, the masonry here is in regular courses, and beautifully executed, the joints being perfectly fitted, and so close as hardly to be visible, except that the stones are slightly convex on their faces, something after the manner of our rustications.

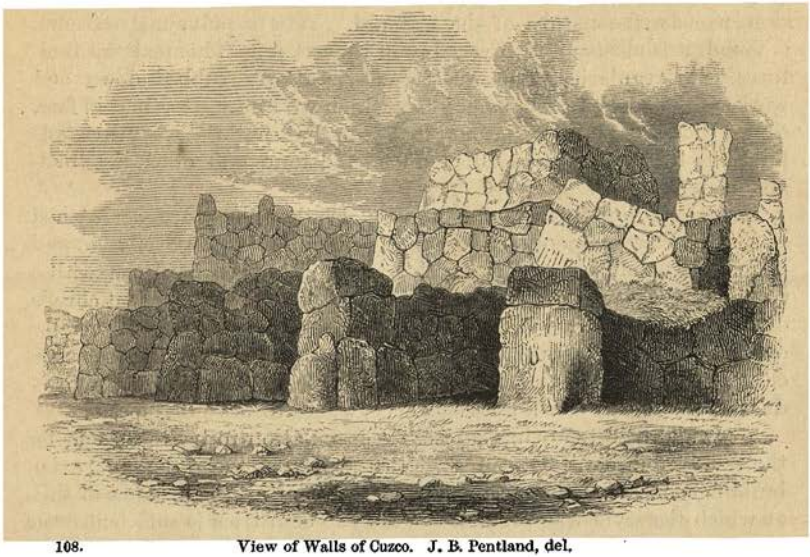
Intermediate between the two extremes just mentioned are the walls of Cuzco, the ancient capital of the kingdom, forming altogether the



107. Sketch Plan of Walls of Cuzco. No scale.

most remarkable specimen now existing of the masonry of the ancient Peruvians. They are composed of immense blocks of limestone, of polygonal form, but beautifully fitted together: some of the stones are 8 and 10 ft. in length, by at least half as much in width and depth, and weigh from 15 to 20 tons; these are piled one over the other in 3 successive terraces, and, as may be seen from the plan, are arranged with a degree of skill nowhere else to be met with in any work of fortification anterior to the invention of gunpowder. To use a modern term, it is a fortification *en tenaille;* the re-entering angles are all right angles,

so contrived that every part is seen, and as perfectly flanked as in the best European fortifications of the present day.



108. View of Walls of Cuzco. J. B. Pentland, del.

It is not a little singular that this perfection should have been reached by a rude people in Southern America, while it escaped the Greeks and Romans, as well as the Mediæval engineers. The true method of attaining this perfection was never discovered in Europe until it was forced on the attention of military men by the invention of gunpowder. Here it is used by a people who never had, so far as we know, an external war, but who, nevertheless, have designed the most perfectly planned fortress we know.

Between these various specimens are many more, some less perfect than the walls of Cuzco, showing greater irregularity in the form, and a greater admixture of large and small stones, than are there found; others, in which all the blocks are nearly of the same size, and the angles approach nearly to a right angle. Examples occur of every intermediate gradation between the house of Manco Capac (woodcut No. 103) and the Tambos (woodcut No. 106), precisely corresponding with the gradual progress of art in Latium, or any European country where the Cyclopean or Pelasgic style of building has been found. So much is this the case, that a series of examples collected by Mr. Pentland from the Peruvian remains might be engraved for a description of Italy, and Dodwell's illustrations of those of Italy would serve equally to illustrate the buildings of South America.

We do not know how long the natives of Italy were in elaborating the regular squared masonry out of the polygonal style, but here we are forced to believe that the whole was done within the short space of less than three centuries, and there seems no reason for doubting that the

greater or less regularity in the masonry is a correct index to the relative age of any specimen we may find.

One element only seems to interfere with this regularity of succession, namely, the nature of the material. Where polygonal masonry is found, it is always and invariably in limestone. This material fractures with regularity, and the facets are easily rubbed down and worked into those smooth, even joints which we find. It seems, in fact, to be a limestone form of masonry, but even that material was afterwards forced to follow the forms adopted for sandstone and other less tractable materials.

Though not quite so certain, it seems also that the polygonal method was used only by people who were ignorant of the use of iron, and were consequently forced to employ tools of copper, hardened with a certain admixture of tin or zinc. We know that very excellent chisels can be, or rather could be, so made, from their having been generally employed by the Egyptians, even in their greatest works; but iron certainly is a better and more economical material, and with its introduction polygonal masonry seems everywhere to have disappeared.

It would be a tempting subject for speculation to try to account for the remarkable similarity in style that exists between these Peruvian buildings and the Pelasgic remains of Italy. But the distance of time at which the style was practised in the two countries is sufficient proof that the resemblance is only accidental. It was disused in Europe at least 5 or 6 centuries before Christ, and did not commence in Peru till 12 centuries after Christ, so that, unless these facts can be controverted or some channel pointed out—of which no trace now exists—by which the style could have been so long preserved, and at last carried to the New World, the fact can only remain as the most remarkable coincidence known to exist in the whole history of architecture. It must be borne in mind that in both cases the style is a mere masonic form, almost wholly without mouldings, and entirely without sculptures: had either of these existed, the chances of such a coincidence would have been diminished a thousand fold. It affords another and even a stronger evidence than that of the pyramids of Mexico, to prove how much alike human nature is in the same stage of civilisation, however distant the country may be, and however different the external circumstances of the people may appear at the first superficial glance.

BOOK IV.

CHAPTER I.[1]

ASSYRIA.

CONTENTS.

Historical Periods — Palaces at Nimroud — Khorsabad — Koyunjik — Babylonia.

CHRONOLOGY.

	DATES.		DATES.
Foundation of Nineveh by Ninus . about	B.C. 1341	Nebuchadnezzar builds Babylon . . .	B.C. 600
Ashurakbal builds north-west palace at Nimroud . . . . . about	900	Cyrus founds Passargadæ	560
Devanubara builds central palace at Nimroud, &c.	879	Buildings of Cambyses at Passargadæ. .	525
Arbaces	821	Darius builds palace at Persepolis . . .	521
Sargon builds palace at Khorsabad . . .	722	Xerxes' halls at Persepolis and Susa . .	486
Sennacherib builds palace at Koyunjik .	702	Artaxerxes Mnemon repairs buildings at Persepolis and Susa	405 to 360
Esarhaddon builds south-west palace at Nimroud	690	Alexander burns palace at Persepolis, ruins Susa, and destroys the Persian empire	332

IN following out the principles laid down in the Introduction, and adopting an arrangement of subject partly geographical and partly chronological, as the most convenient and the one least likely to lead to repetition, the next great section into which our subject divides itself is that of Assyrian architecture. This is easily defined, both in space and in time. Locally, it comprises all the countries between the Valley of the Indus and the Mediterranean Sea—the Western boundaries being the Sea of Marmora, the Mediterranean, and the Red Sea; the Northern, the Caucasus, and the seas on either hand; the Southern, the Indian Ocean.

Through the centre of this great region flow the Euphrates and the Tigris. It is on the banks of these rivers that the people were first

[1] This chapter and that next following may be regarded as, in all essential respects, an abridgment or condensation of the information contained in a work published by the author about two years ago, entitled, 'The Palaces of Nineveh and Persepolis Restored,' the *only real difference* being that the more perfect decipherment of the inscriptions since that work was published has caused some of the palaces and buildings to be ascribed to different kings and dynasties from those to whom they were then assigned, and proved them to be more modern than was suspected, for the oldest at least. Their order, however, remains the same, and so consequently do all the architectural inferences drawn from it. Those readers who may desire further information on the subject are referred to the work alluded to.

grouped together in civilised communities; and from this centre the arts and the peculiar civilisation of the race spread outwards to all the boundaries of the province.

During the whole period through which our acquaintance with these countries extends, we find the three great typical races of mankind, the Tartar, the Semitic, and the Arian, living together in the Valley of the Euphrates, and intermingled with one another in a manner that makes it extremely difficult to discriminate between them.

It would be out of place to enter here into any discussion of the origin and affinities of the Assyrian people, the subject of whose architecture we are now entering upon, the principal point being that, at the period to which all the monuments hitherto discovered belong, the architecture of Assyria was that of a Semitic people, and especially interesting as exhibiting actual examples of that style with which we have long been familiar from the descriptions in the Bible of the buildings of Solomon.

The discovery of the palaces of Nineveh has enabled us to understand what we never could have distinctly made out from mere verbal descriptions. The architecture of Assyria is now as familiar to us as that of Egypt, and we can realise as correctly the appearance of the house of the Forest of Lebanon as we could that of Greek temples from the description of Pausanias, aided by the examination of their actual remains.

The Assyrian is an entirely new chapter added to our history of architecture since the year 1843, and certainly not one of the least interesting, not only from its own intrinsic merits and the beauty of many of its forms, but because of its historic value, being the sister style to that of Egypt, and the parent of all the Ionic forms we afterwards find so currently and so beautifully blended with the architecture of Greece.

Until the discoveries in Assyria were made, half the history of the architecture of Greece was a riddle and inexplicable mystery; now all is clear, and with Egypt on the one hand, and Assyria on the other, we are enabled to trace every feature to its source. These two still stand, and probably will ever remain, as the primitive styles of the human race—essentially distinct in all their more important features, borrowing very little from each other, but each working out its own objects independently of the other. It seems absolutely hopeless to look for anything anterior to the style of Egypt which can have had any influence upon it; and, so far as we can see, nearly as idle to attempt to find in Asia anything that can have influenced the architectural style of the great Assyrian empire.

Politically the history of the country separates itself into two great divisions, between which comes the Egyptian domination under the 18th dynasty. To the earlier period belong the migrations of Nimrod and Asshur, the building of Kalah, Resen, and Nineveh in Assyria—of Erech, Accad, Babel in the South, and the still more famous erection of the tower of Babel. It is uncertain, however, from the Biblical account, whether the latter erection was ever allowed to

be raised much above the foundation, and there certainly is no sufficient evidence for assuming that the temple of Belus, described by the Greeks, was either the tower of Babel itself, or even at all resembled it. Still less is it possible now to attempt to identify that building with the Birs Nimroud, every brick of which bears the name of Nebuchadnezzar, the son of Nobopolassar. Nor, indeed, can we feel sure that one single remnant exists of all the buildings of this early age.

Although it is nearly certain, from the monumental records of Egypt, that the Egyptians overran Assyria, and practically must have held it in subjection for nearly 5 centuries—from the 19th to the 14th B.C.—still they have left no monuments in the subject land; nothing, indeed, by which we can now trace the extent of their domination; and none appear to have been raised by the natives while under their rule of sufficient importance to last to a later period.

The architectural history commences therefore with the period marked by the Greeks as that of the rise of Ninus and his successors—about the middle of the 14th century B.C.—coinciding with the decline of the power of the Egyptians, and the exode of the Jews from that country.

This second or great Assyrian period divides itself again into two epochs, the first extending from Ninus (1341) to the revolt of Arbaces (821), a period of 520 years. To this age belong the North-west palace of Nimroud, the Central palace, the rock-cut sculptures at Bavian, and generally all the older monuments of the Assyrian period.

The second epoch extends over only 221 years, from Arbaces to the destruction of Nineveh, about the year 600, and, so far as architecture is concerned, is by far the most brilliant. To it belong the palace at Khorsabad, built by Sargon (Shalmaneser?) about 722 B.C., that of Koyunjik by Sennacherib (703), the South-west palace at Nimroud by Esarhaddon (690), and the North palace at Koyunjik, built apparently by a son of Esarhaddon. These are the most splendid edifices yet discovered, and, now that the inscriptions have been deciphered, there can be almost no doubt either as to the name of the king who built them, or to the approximate dates above given for their erection.

On the destruction of Nineveh Babylon rose from its ruins with renewed splendour during the reign of Nebuchadnezzar; and it is to him, as before remarked, that every building yet discovered about Babylon and the Birs Nimroud owes its origin; at least every brick hitherto exhumed is marked with his name. They are now all nearly formless ruins, and add little to our architectural knowledge, though much historical information may hereafter be gleaned from their more careful study.

From Babylon we pass to Passargadæ, which was adorned by Cyrus and Cambyses between the years 560 and 523, and thence to the far more magnificent capital of Darius and Xerxes, who have left on the platform of Persepolis remains of architectural magnificence unrivalled in the country, and which may be considered as the culminating form of the earlier architecture of the Assyrians and Babylonians.

At Susa, Artaxerxes Mnemon erected or restored a great hall, very similar to that at Persepolis; and, as far as Ecbatana and Teheran, remains are found of this great Persian style, which closes the first series of the architectural monuments of Assyria.

Contemporary with the Assyrian period are the buildings of Solomon at Jerusalem, and contemporary with the Persian arose that peculiar style of imitating wooden erections in stone which prevailed all over Lycia and the southern provinces of Asia Minor. To the same age also belong the rock-cut sculptures of Doganlu, and those of Pterium: and no doubt many curious fragments of architectural antiquity still remain to be examined in the recesses of the almost unexplored countries of Asia Minor. These, however, are the principal of those which are found during the ten centuries that elapsed between Ninus and Alexander the Great.

With the Macedonian conquest, all originality in art ceased for nearly five centuries in the valley of the Euphrates. The Greeks, it is true, built nobly in their own Ionian provinces, but it was in their own style. Syria was adorned with the still extant ruins of Baalbec and Palmyra, and almost every city of Asia Minor bears traces of Roman magnificence, but all in the Roman style. Indeed, with the one exception of the ruins of Al Hadhr, not one single edifice is known which was erected between the time of Alexander (B.C. 323) and that of the first Sassanian Ardeshir (A.D. 223), which has any claim to be called native, either in style or arrangement, and even this can hardly claim to rank higher than bastard Roman. At Diarbekir, it is said, there are some other remains of the same age, but they have not yet been delineated.

During the Sassanian period (A.D. 223 to 632) a slight revival took place in the native style of architecture. It was neither, it must be confessed, very original nor very beautiful, but still it is interesting as a transitional style, contributing many features found in the Saracenic, and still more in the Christian styles of Armenia and the neighbouring countries. So that, although it may not itself be worthy of much attention, still, as the last of the native styles of the great architectural province, and as the first of the modern styles that took shape and consistency in these Eastern provinces in the middle ages, it should not be passed over without much more attention than has hitherto been bestowed upon it. It, however, belongs more properly to a subsequent chapter, and will be more appropriately treated, as well as more easily understood, after reviewing the architecture of the Romans, many features of which are found in this Eastern style.

The remarkable absence of sacred or monumental buildings at Nineveh, or in the other Assyrian palaces, has already been alluded to. The pyramid at Nimroud, at one time supposed to be a tomb, resembles so closely the description by Greek writers of the temple of Belus at Babylon, and is so like what we now know of Babylonian temples, that it may almost certainly be classed among them. Setting, therefore, this structure aside, there are no sepulchres, no representation of funeral rites, nothing to show that the Assyrians cared for their dead,

or attached any importance to the preservation of their bodies after death.

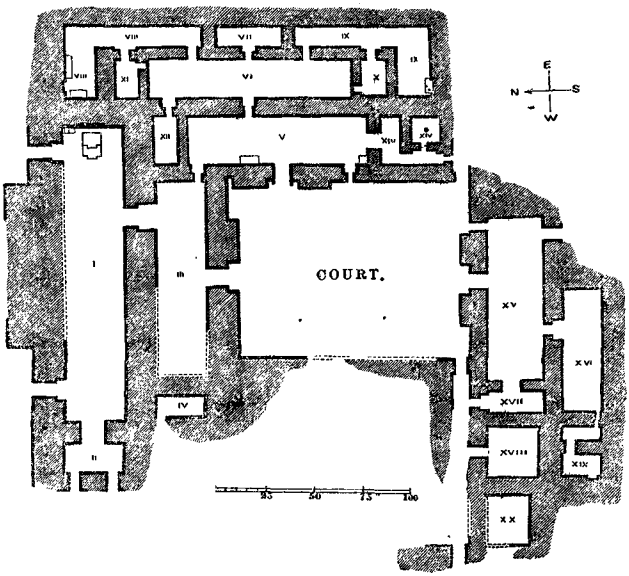
In one corner of the palace at Khorsabad is found a building of black stone, raised on a terrace by itself, and, though much ruined, still showing, with sufficient distinctness, that it was exclusively devoted to religious purposes, and a seven-storied pyramidal temple has lately been discovered there. Nothing of the sort has been found at Koyunjik, and, with the exception of the great pyramid at the north-west angle, which is almost certainly a religious edifice, Nimroud is also without anything that can properly be called a temple.

All the buildings, therefore, that have been discovered in Assyria are palaces, or, perhaps it might be more correct to say, palace-temples, like those in Egypt, regarding which it is difficult even now to say whether they ought to be called palaces or temples. In Egypt, however, the latter element was certainly the predominant and overruling one. In Assyria, on the other hand, the buildings partook far more of the palatial than the sacred character, though, at the same time, many of the apartments seem, from the nature of their sculptures, to have been principally at least devoted to the purposes of worship.

NIMROUD.

The oldest of the buildings hitherto excavated in Assyria is the North-west palace at Nimroud, built by a Sardanapalus, about the year 900 B.C. Though not the largest, it more than makes up for this deficiency by the beauty of its sculptures, and the general elegance of its ornaments. These are not only superior to those of the following dynasty, but so different from them that it was difficult to believe that a greater interval had not elapsed between them, at least before the inscriptions had been sufficiently deciphered to correct the dates originally assigned.

As will be seen by the annexed woodcut (No. 109), the excavated portion of the palace is nearly a square, about 330 ft. each way. The principal entrance was on the north, at the head of a noble flight of steps, leading from the river to the level of the terrace on which the palace stood. From this, 2 entrances, adorned with winged bulls, led to a great hall, 152 ft. in length by 32 in width, at the upper end of which was situated the throne, and at the lower a smaller apartment or vestibule opened on the terrace that overlooked the river. Within the great hall was one of smaller dimensions, opening into the central court of the palace, the entrance of which was so arranged as to ensure privacy, proving that it partook of the nature of the private apartments or Hareem of the palace. To the eastward of this was arranged a suite of apartments, 3 deep, decreasing in width as they receded from the light. To the south was a double suite, apparently the banqueting-halls of the palace, and to the westward a fourth suite, more ruined, however, than the rest, owing to its being situated so near the edge of the terrace. As far as can be made out the rooms on this face seem to have been arranged 3 deep: the outer opened on the terrace by



109. North-West Palace at Nimroud.[1]

three portals, the central one of which had winged bulls, but the lateral seem to have been without these ornaments; the whole façade being about 330 ft. in extent, north and south.

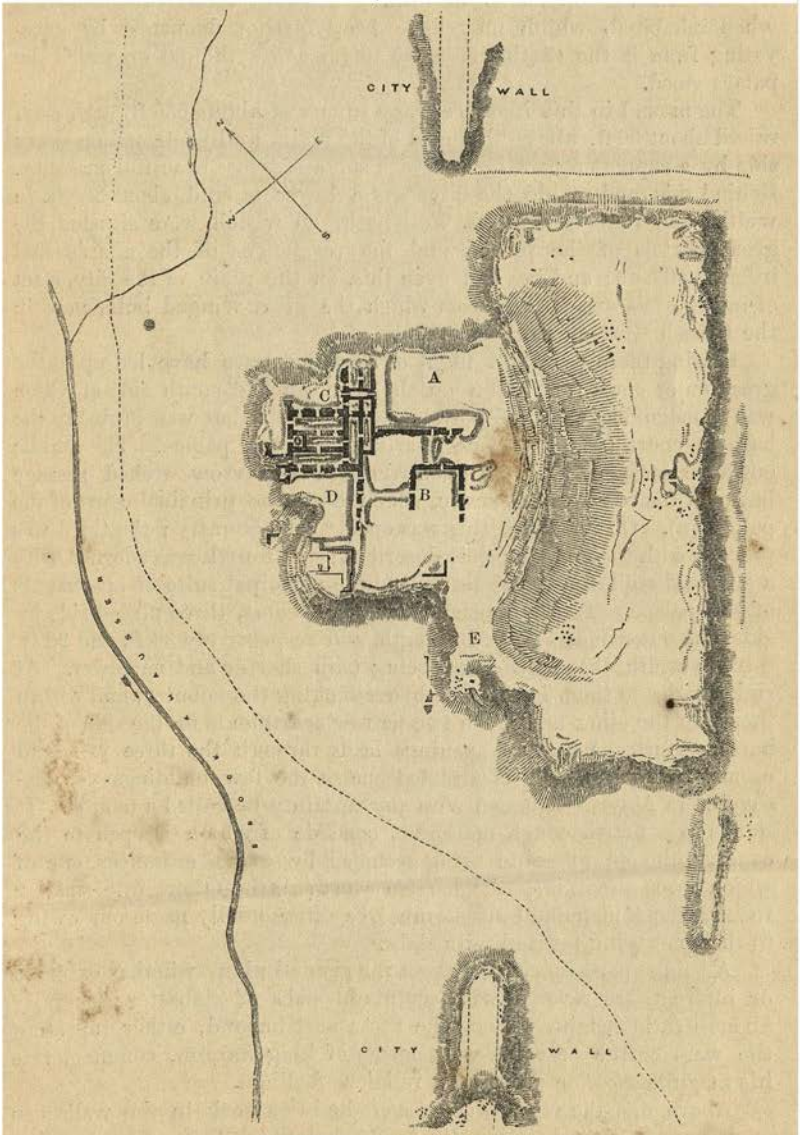
All these apartments were lined with sculptured slabs, representing mostly either the regal state of the sovereign, his prowess in war, or amusements during peace, but many of them wholly devoted to religious subjects. Beyond these apartments were many others, covering at least an equal extent of ground, but, their walls having been only plastered and painted, the sun-burnt bricks of which they were built have crumbled again to their original mud. It is evident, however, that they were inferior to those already described, both in form and size, and applied to inferior purposes.

The mound at Nimroud was so much extended after this palace was built, and so covered by subsequent buildings, that it is now impossible to ascertain either the extent or form of this, which is the only palace of the older dynasty known; and it will therefore perhaps be as well to turn at once to Khorsabad, which, being built wholly by one king, and not altered afterwards, will give a clearer idea of the position and arrangements of an Assyrian palace than we can obtain from this.

[1] This plan, with all the particulars here mentioned, are taken from Layard's work, which is the only authority on the subject, so that it is not necessary to refer to him on every point. The plan is reduced to the usual scale of 100 ft. to one inch, for easy comparison with Khorsabad and the Persepolitan and other edifices quoted.

KHORSABAD.

The city of Khorsabad was situated about 15 miles from Nineveh, in a northern direction, and was nearly square in plan, measuring about an English mile each way. Nearly in the centre of the north-western wall was a gap, in which was situated the mound on which the palace stood. It seems to have been a peculiarity common to all



110. Plan of Palace at Khorsabad. No scale.

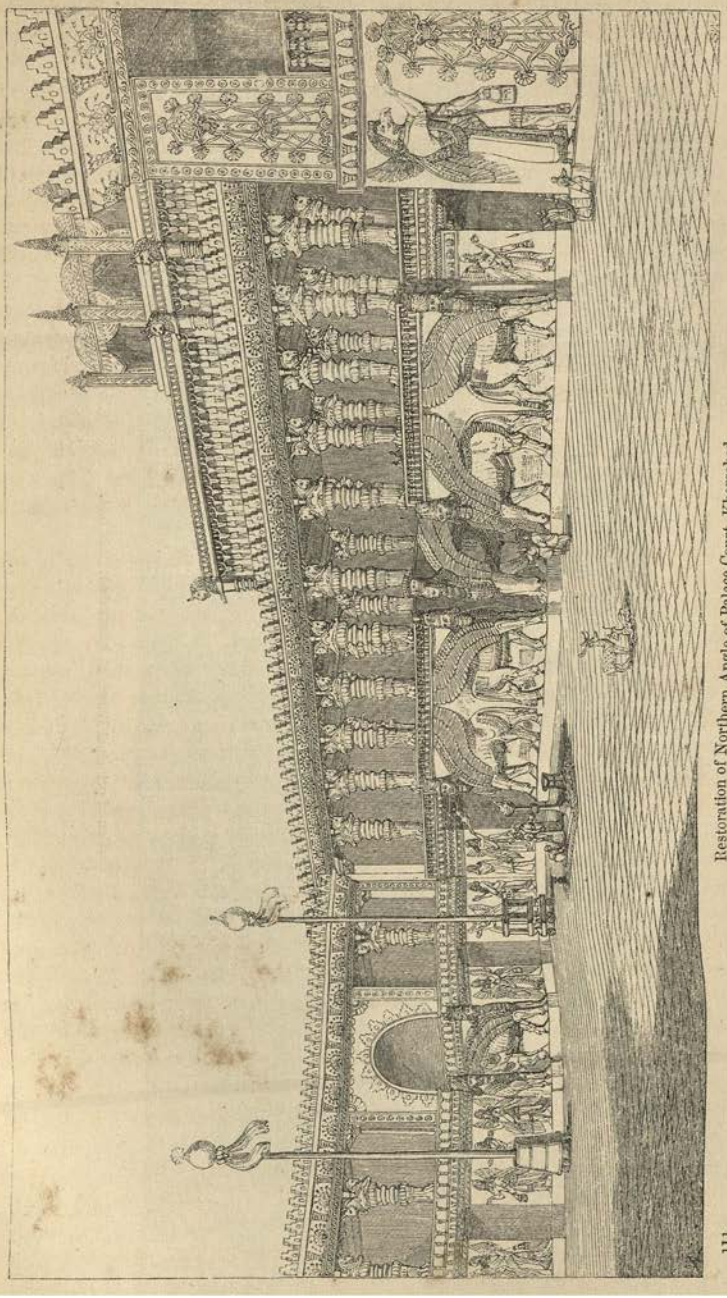
Assyrian palaces to be so situated. Their builders wisely objected to being surrounded on all sides by houses and walls, and at the same time sought the protection of a walled enclosure to cover the gateways and entrances to their palaces. At Koyunjik and Nimroud the outer face of the palace was covered and protected by the river Tigris, and here the small brook Kausser flows past the fort, and, though now an insignificant stream, it is by no means improbable that it was dammed up so as to form a lake in front of the palace when inhabited, which may have been further deepened by excavating from it the earth necessary to raise the mound on which the palace stood.

The mound in this instance was a square of about 650 ft. each way, raised about 30 ft. above the level of the plain, and protected on every side by a supporting wall cased with stone of very beautiful masonry. Behind this, and inside the city, was a lower mound, about 300 ft. in width, and 1300 or 1400 ft. in length, on which were situated the great portals of the palace, and the residences of the guards and inferior officers; and beyond even this, on the plain of the city, a set of interportals are found, from which the great winged bulls now in the British Museum were taken.

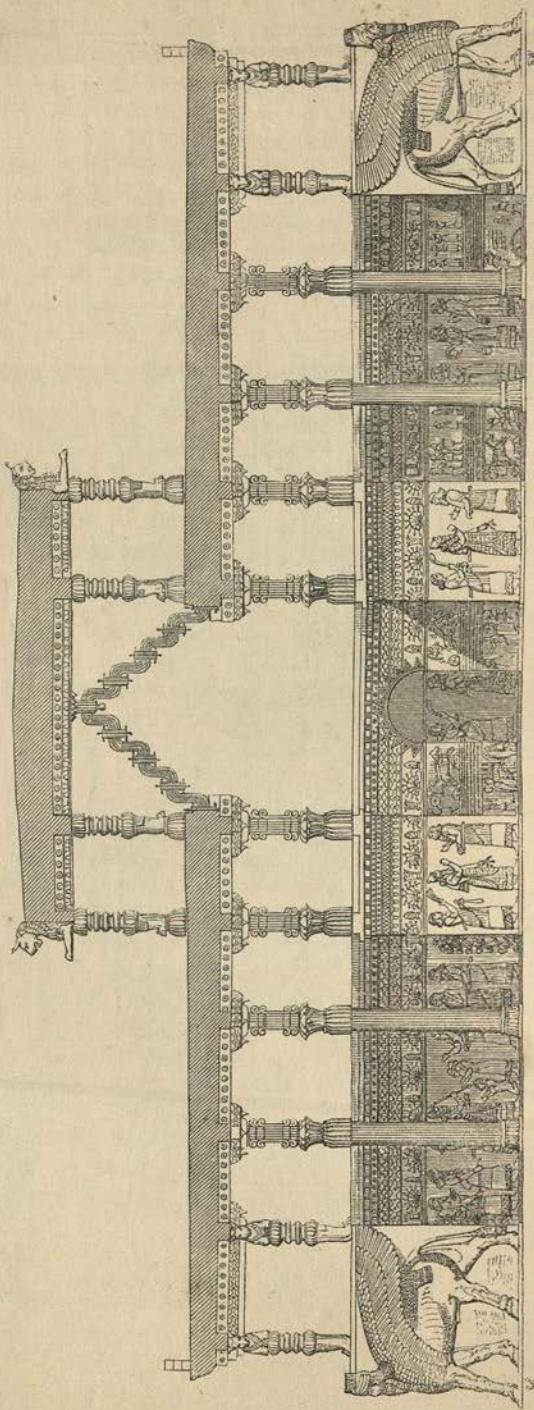
Passing these portals a flight of steps seems to have led up to the great outer court, marked A on the plan, on the south side of which was a magnificent set of portals leading into what was probably the hareem court (B) or private apartments of the palace. The public entrance appears to have been through a narrow arched passage between the two courts A and C, which led to the principal court of the palace (C). On two sides this was open to the country; the third was pierced with the entrance just described; the fourth was adorned with a splendid triple entrance leading to the principal suite of apartments of the palace. These consist of 4 great rooms, three placed side by side, the outer ones 116 ft. in length, and respectively 33 ft. and 29 ft. 8 in. in width, the central one being both shorter and narrower. At right angles to them is the fourth, overlooking the country, and within these, on the other hand, are two narrow apartments on the side of the hareem court. A line of openings leads through the three principal rooms, fronting which is situated one of the few buildings yet discovered in Assyria that can with any certainty be called a temple. It stands in a fourth court, marked D, one side of which is open to the country, the opposite side being occupied by several entrances, one of which leads direct into the hareem court (B), the others into smaller rooms, whose plans and uses cannot be satisfactorily made out owing to their not being revêted with slabs.

All those parts marked dark on the general plan, whether external or internal, are revêted with sculptural slabs of alabaster, generally about 9 ft. in height, which, like those at Nimroud, either represent the wars or the peaceful amusements of king Sargon, commemorate his magnificence, or express his religious feelings.

Above this the regular courses of the brickwork in the walls can even now be traced, generally to the height of 3 or 4 ft. more; but



111. Restoration of Northern Angle of Palace Court, Khorsabad.

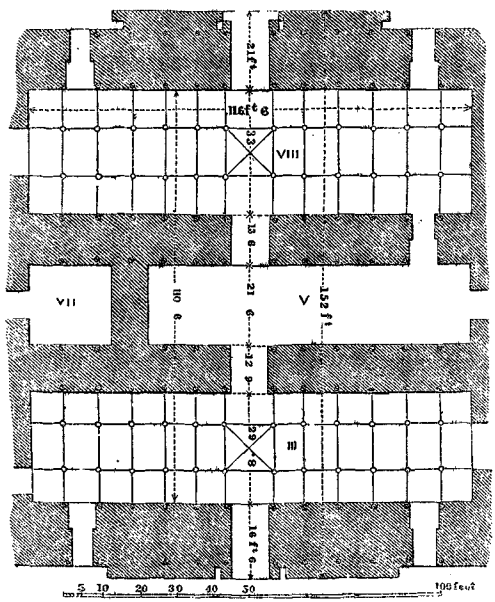


Section of principal Rooms at Khorsabad. 152 feet.

112.

the size of the winged bulls in the portals, and other indications, prove that they must have been raised to a height of at least 16 or 18 ft.; and the number of painted bricks and traces of colour around their bases show that they were adorned with paintings, generally in conventional patterns, but of great brilliancy.

Above this we are left somewhat to conjecture. The whole superstructure was of wood, and has evidently in most of the palaces been destroyed by fire. The indications still left, however—the enormous thickness of the walls—the necessities of the climate—and, more than this, the existing remains at Persepolis, where much that is here in wood is repeated in stone—enable us to restore the upper part of the palace with considerable confidence. This restoration is shown in the two large woodcuts here given, the first of which (No. 111) represents the external appearance of the court (c), the other (No. 112) a section of the three principal rooms of the palace, of which a plan is given (woodcut No. 113).



Scale 50 feet to an inch.

113. Three principal Rooms at Khorsabad.

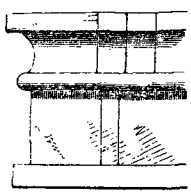
It will be observed that the area covered by the walls is of nearly the same extent as that of the rooms themselves, so that the galleries formed in fact an upper story to the palace; and thus, in the heat of the day, the thickness of the walls kept the inner apartments free from heat and glare, while in the evenings and mornings the galleries formed airy and light apartments, affording a view over the country, and open on every side to the breezes that at times blow so refreshingly over the plains. It will also be observed that by this arrangement the

direct rays of the sun could never penetrate into the halls themselves, and that rain, or even damp, could easily be excluded by means of curtains or screens.

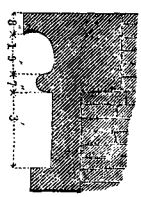
On the lower terrace another suite of apartments has been since excavated by M. Place, who succeeded M. Botta as French Consul at Mosul. These differ in many respects from anything hitherto discovered in Assyria. The walls are neither revêted with slabs, nor are pictures painted on the plaster: but they are ornamented by a series of alternate reedings, separated by pilasters with square sunk panels: the former looking like the stems of trees jammed closely together—the latter like deep coffers of squared timbers.

The details of these excavations have not yet been published, but the same mode of decoration has been found at Wurka in Southern Babylonia, at the Birs Nimroud, and other places, and offers a new style which will no doubt be further developed in future excavations. This mode of decoration at Khorsabad covers not only the walls of the rooms internally, but is repeated on the exterior on a larger scale. There are other peculiarities in the form and arrangement of these apartments, which will open a new view of Assyrian art when they are given to the public.

So little remains of the temple that it is difficult to say what its original form may have been; the terrace, however, which supported it is interesting as showing almost the only instance of a perfect Assyrian moulding or cornice, betraying a similarity to the forms of Egyptian architecture which we do not find anywhere else. The curve, however, is not exactly that of an Egyptian cornice, being continued beyond the vertical tangent; but this may have arisen from the terrace being only 6 ft. in height, and consequently the curve below the line of the eye, and thus requiring a different treatment from one placed so high above it as is usually the case in Egypt.



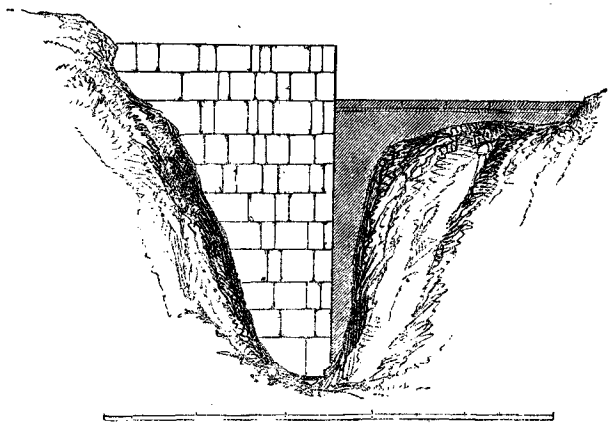
114. Elevation of Stylobate of Temple.



115. Section of Stylobate of Temple.

From the above description it will be observed that in every case the principal part, the great mass of the palace, was the terrace on which it stood, which was raised by artificial means to a height of 30 ft. and more, and, as shown in the annexed illustration, carefully revêted with stone. On this stood the palace, consisting principally of one great block of private apartments situated around an inner square court. From this central mass 2 or 3 suites of apartments projected as wings, so arranged as to be open to the air on 3 sides, and to give great variety to the outline of the palace as seen from below, and great play of light and shade in every aspect under which the building could be surveyed. So far also as we can judge, the whole arrangements were admirably adapted to the climate, and the ornaments not only elegant in themselves, but singularly expressive and appropriate to the situations in which they are found.

M. Place has recently excavated the huge mound at E, and found that it contained a 7-storied pyramidal temple very similar to the Birs



116. Terrace Wall at Khorsabad.

Nimroud, which will be described further on. Neither the details nor the dimensions of the building have yet been published.

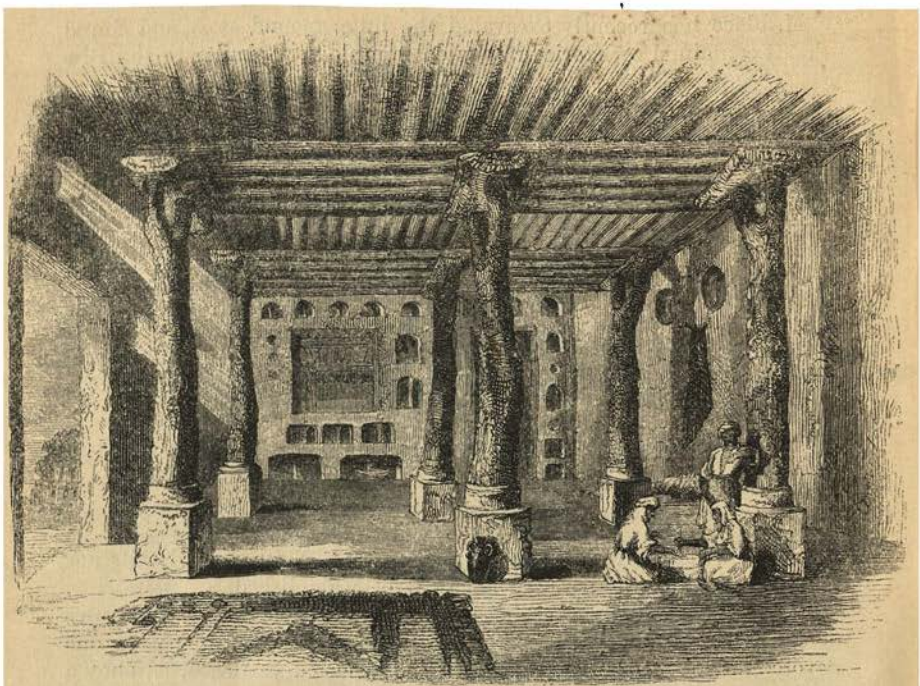
Another most important discovery of M. Place is that of the gates of the city. These were apparently always constructed in pairs—one devoted to foot-passengers, the other to wheeled carriages, as shown by the marks of wheels worn into the pavement in the one case, while it is perfectly smooth in the other.

Those appropriated to carriages had plain jambs rising perpendicularly 12 or 15 ft. These supported a semicircular arch, adorned on its face with an archivolt of great beauty, formed of blue enamelled bricks, with a pattern of figures and stars, of a warm yellow colour, relieved upon it.

The gateways for foot-passengers were nearly of the same dimensions, about 12 or 15 ft. broad, but they were ornamented by winged bulls with human heads, between which stood giants strangling lions. In this case the arch sprang directly from the backs of the bulls, and was ornamented by an archivolt similar to that over the carriage entrances.

Other arches have been found in these Assyrian excavations, but none of such extent as these, and none which show how completely the Assyrians in the time of Sargon understood not only the construction of the arch, but also its use as a decorative architectural feature.

There must always be many points, even in royal residences, which would be more easily understood if we knew the domestic manners and usages prevalent among the common people of the same era and country. This knowledge we actually can supply, in a great measure, in the present case, from modern Eastern residences. Such a mode of illustration in the West would be out of the question; but in the East manners and customs, processes of manufacture, and forms of building have existed unchanged from the earliest times to the present day. This immutability is the greatest charm of the East, and frequently



117. Interior of a Yezidi House at Bukra, in the Sinjar.

enables us to understand what in our own land would have utterly faded away and been obliterated. In the Yezidi House, for instance, borrowed from Mr. Layard's work, we see an exact reproduction, in every essential respect, of the style of building in the days of Sennacherib. Here we have the wooden pillars with bracket capitals, supporting a mass of timber intended to be covered with a mass of earth sufficient to prevent the rain or heat from penetrating to the dwelling. There is no reason to doubt that the houses of the humbler classes were exactly similar to what is here represented; and this very form amplified into a palace, and the walls and pillars ornamented and carved, would exactly correspond with the principal features of the palace of the great Assyrian king.

Palace of Sennacherib, Koyunjik.

Having said so much of Khorsabad, it will not be necessary to say much about the palace at Koyunjik, built by Sennacherib, the son of the Khorsabad king.

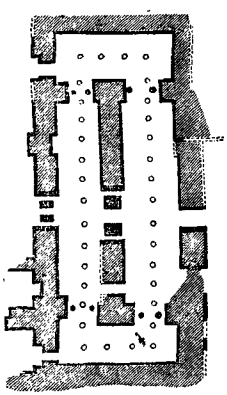
As the great metropolitan palace of Nineveh, it was of course of far greater extent and far more magnificent than the suburban palace of his father. The mound itself on which it stands is about $1\frac{1}{2}$ mile in circumference (7800 ft.); and, as the whole was raised artificially to the height of not less than 30 ft., it is in itself a work of no mean magnitude.

Existing Remains of Propylæa at Khorsabad

118.

The principal palace stood at the south-western angle of this mound, and as far as the excavation has been carried seems to have formed a square of about 600 ft. each way—double the lineal dimensions of that at Nimroud. Its general arrangements were very similar to those at Khorsabad. It enclosed within itself two or three great internal courts, surrounded by 60 or 70 apartments, some of great extent. The principal façade, facing the east, far surpassed any of those of Khorsabad, both in size and magnificence, being adorned by 10 winged bulls of the largest dimensions, with two giants between the two principal external ones, in the manner shown in the annexed woodcut (No. 118), besides smaller sculptures—the whole extending to a length of not less than 350 ft. Inside this great portal was a hall, 180 ft. in length by 40 in width, with a recess at each end, and through it access was had to two court-yards, one on the right and one on the left; and beyond these to the other and apparently the more private apartments of the palace, overlooking the country and the river Tigris, which flowed to the westward of the palace—the principal entrance, as at Khorsabad, being from the city.

It is impossible, of course, to say how much further the palace extended, though it is probable that nearly all the apartments which were revêted with sculptures have been laid open; but what has been excavated occupies so small a portion of the mound that it is impossible to escape the conviction that it forms only a very small fraction of the imperial palace of Nineveh. Judging even from what has been uncovered, it is, of all the buildings of antiquity, surpassed in magnitude only by the great palace-temple at Karnac; and, when we consider the vastness of the mound on which it is raised, and the richness of the ornaments with which it was adorned, it is by no means clear that it was not as great, or at least as expensive, a work as the great palace-temple of Thebes. The latter, however, was built with far higher motives, and designed to last through ages, while the palace at Nineveh was built only to gratify the barbaric pride of a wealthy and sensual monarch, and perished with the ephemeral dynasty to which he belonged.



Scale 100 ft. to 1 inch.

119. Hall of South-West Palace.

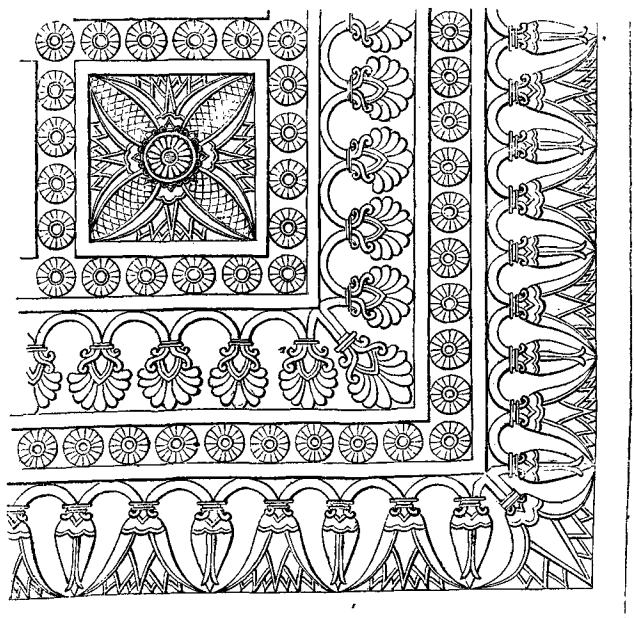
Palace of Esarhaddon.

Another Assyrian palace, of which considerable remains still exist, is that of Esarhaddon, commonly known as the South-west palace at Nimroud. Like the others, this too has been destroyed by fire, and the only part that remains sufficiently entire to be described is the entrance or southern hall. Its general dimensions are 165 ft. in length by 62 ft. in width, and it consequently is the largest hall yet found in Assyria. The architects, however, do not seem to have been quite equal to roofing so large a space even with the number of pillars with which they seem usually to have crowded their floors; and it is

consequently divided down the centre by a wall supporting dwarf columns, forming a centre gallery, to which access was had by bridge galleries at both ends, a mode of arrangement capable of great variety and picturesqueness of effect, and of which I have little doubt that the builders availed themselves to the fullest extent. This led into a court-yard of considerable dimensions, surrounded by apartments, all which are too much destroyed by fire to be intelligible.

Another great palace, built, as appears from the inscriptions, by a son of Esarhaddon, has been discovered nearly in the centre of the mound at Koyunjik. Its terrace-wall has been explored for nearly 300 ft. in two directions from the angle near which the principal entrance is placed. This is on a level 20 ft. lower than the palace itself, which is reached by an inclined passage nearly 200 ft. in length, adorned with sculpture on both sides. The palace itself, as far as has been explored, is similar in its arrangements to those already described; but the sculptures with which it is adorned are more minute and delicate, and show a more perfect imitation of nature, than the earlier examples, though inferior to them in grandeur of conception and breadth of design.

The architectural details also display a degree of elegance and an amount of elaborate finish not usually found in the earlier examples, as is well illustrated by the woodcut No. 120, representing one of the pavement slabs of the palace. It is of the same design, the ornaments are the same, as the earlier examples, but the finish is better, and the



120 Pavement Slab from the Central Palace, Koyunjik.

whole design more elaborate, than in any of the more ancient examples we are acquainted with.

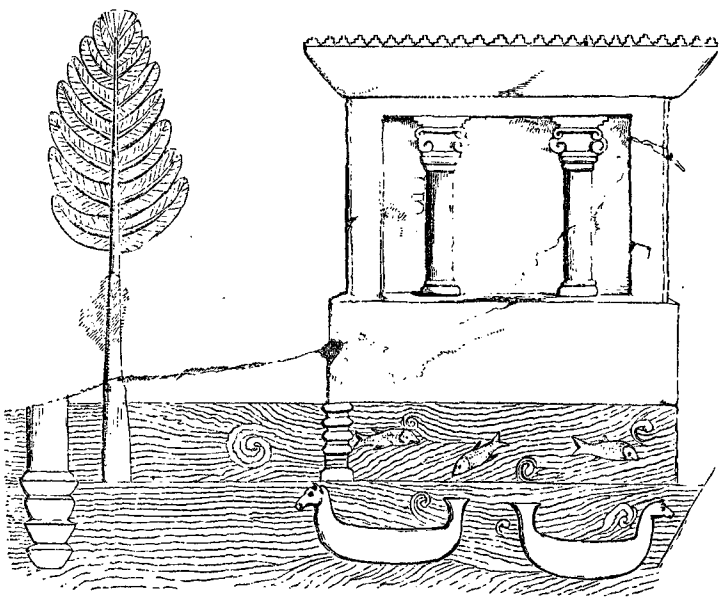
Besides these, there were on the mound at Nimroud a central palace built by Tiglath Pileser, and one at the south-eastern angle of the mound, built by a grandson of Esarhaddon, but both too much ruined for any one now to be able to trace either their form or extent; and around the great Pyramid, at the north-west angle, were buildings more like temples than anything else on the mound—all their sculptures apparently pointing to devotional purposes, though their forms are very much the same as those of the palaces, and there certainly is nothing in them to indicate that the mound at whose base they were situated was appropriated to the dead, or to funereal purposes. Between the north-west and south-west palaces also was raised a terrace higher than the rest, on which were situated some chambers whose use it is not easy to determine.

Notwithstanding this impossibility of making out all the details of the buildings situated on the great mounds of Nimroud and Koyunjik, these great groups of buildings must have ranked among the most splendid monuments of antiquity, surrounded as they were by stone-faced terraces, approached on every side by noble flights of stairs, and surmounted by great palaces, with towers and temples, and other buildings, of which only the most indistinct traces now remain. When all this was seen gay with colour, and crowded with all the state and splendour of an eastern monarch, it must have formed a scene of such dazzling magnificence that one can easily comprehend how the inhabitants of the little cities of Greece were betrayed into such extravagant hyperbole when speaking of the size and splendour of the great cities of Assyria.

The worst feature of all this splendour was its ephemeral character—though perhaps it is owing to this very fact that we now know so much about it—like the reed that bends to the storm and recovers its elasticity, while the oak is snapped by its violence. Had these buildings been constructed like those of the Egyptians, their remains would probably have been applied to other purposes long ago; but having been overwhelmed so early and forgotten, they have been preserved to our day, and it is not difficult to see how this was done. The pillars that supported the roof being of wood, probably of cedar, and the beams on under side of the roof being of the same material, nothing was so easy as to set fire to them. The fall of the roofs, which were probably composed, as at the present day, of 5 or 6 ft. of earth, required to keep out the heat as well as the wet, would alone suffice to bury the building up to the height of the sculptures. The gradual crumbling of the thick walls consequent on their unprotected exposure to the atmosphere would add 3 or 4 ft. to this; so that it is hardly too much to suppose that green grass might have been growing over the buried palaces of Nineveh before two or three years had elapsed from the time of their destruction and desertion. When once this had taken place, the mounds were far too tempting positions not to be speedily occupied by the villages of the natives; and a few centuries of mud-hut building would complete

the process of entombment so completely as to protect the hidden remains perfectly for the many centuries during which they have lain buried, and to enable us now to restore their form almost as certainly as we can those of the temples of Greece or Rome, or of any of the great nations of antiquity.

It is by no means improbable that at some future period we may be able to restore much that is now unintelligible, from the representations of buildings on the sculptures, and to complete our account of their style of architecture from illustrations drawn by the Assyrians themselves. One or two of these have already been published. The annexed woodcut, for instance (No. 121), of a sculptured view of a little fishing

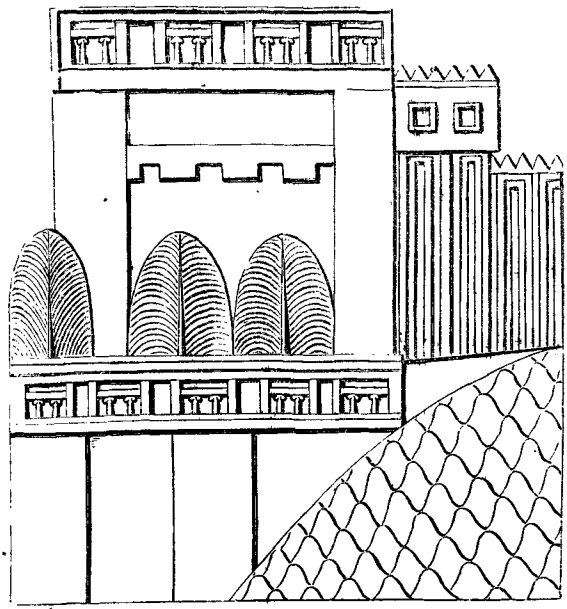


121. Pavilion from the sculptures at Khorsabad.

pavilion on the water's edge, exhibits in a rude manner all the parts of an Assyrian order with its entablature, and the capital only requires to be slightly elongated to make it similar to those found at Persepolis.

Another curious representation (woodcut No. 122) is that of a palace of two stories, from a bas-relief at Koyunjik, showing a range of openings under the roof in both stories, divided into three parts by two Ionic columns between square piers, probably meant to represent such an arrangement as that shown in woodcut No. 111, while the part on the right is a correct representation of the panelled style of ornamentation recently discovered at Khorsabad and elsewhere. Further comparisons will no doubt do much to complete the subject; and when the names written over them are definitively deciphered, we may find that we really possess contemporary representations of Jerusalem, of Samaria,

of Van, and other cities familiar to us both from ancient and from modern history.



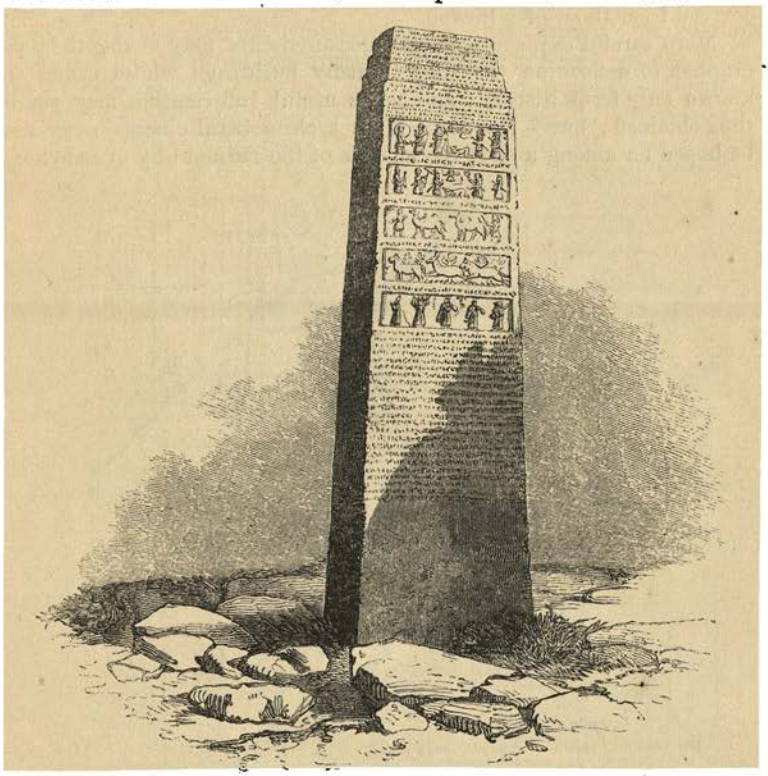
122. Exterior of a Palace, from a Bas-relief at Koyunjik.

The Pyramid at Nimroud yet remains to be mentioned. It stands at the north-west angle of the mound, and measures 167 ft. each way; its base, 30 ft. in height, is composed of beautiful stone masonry, ornamented by buttresses and offsets, above which the wall was continued perpendicularly in brickwork. In the centre of the building, on the level of the base or terrace, a long vaulted gallery or tunnel was discovered, but it contained no clue to the destination of the building.

The whole now rises to a height of about 120 ft. from the plain, and is composed of sun-dried bricks, with courses of kiln-burnt bricks between at certain distances near the summit, which render it probable that it originally was not a pyramid in the usual sense of the term, but a square tower, rising in three or four stories, each less than the lower one, as in the traditional temple of Belus at Babylon, or as the summit of the obelisk represented in the woodcut (No. 123), which most probably is a monolithic reproduction of such a temple or tower as this, rather than an obelisk like those of Egypt.

The excavations at the Birs Nimroud, and the discovery of a similar seven-storied temple at Khorsabad, leave little doubt that this tower was also a temple, though it is not clear in how many stories, or to whom it was dedicated.

Other obelisks have since been discovered, some of which look even more like miniature models of temples than this one does.



123. Obelisk of Divanubara. From Layard's Nineveh.

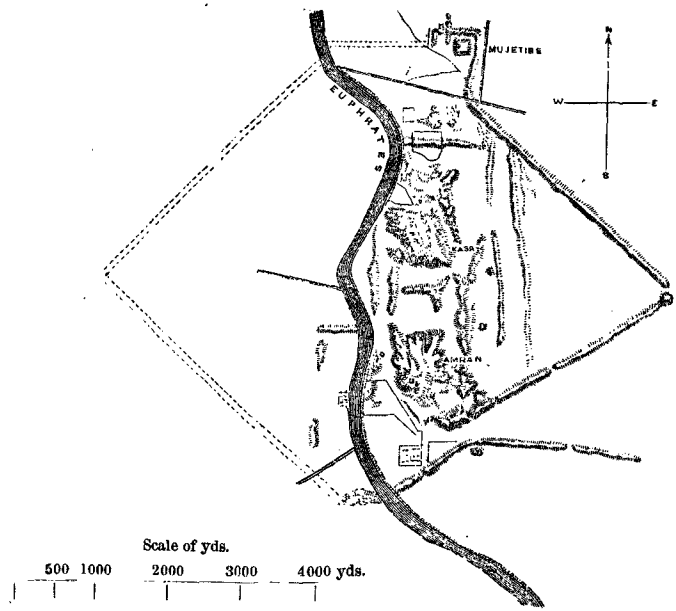
BABYLONIA.

The knowledge which we now possess of the remains in Assyria furnishes an explanation why all researches at Babylon have hitherto been in vain. In the former country, wherever we get beyond the limits of the sculptured slabs, all is one mass of formless mud, in which it is impossible to distinguish what were chambers, what walls, or indeed to be sure that it was a habitable building at all; and as in Babylonia no trace has yet been found of these slabs ever having been used, it is easy to understand how all the excavations hitherto made have been so fruitless in results.

Still the mound called Mujelibè is just such a one as those that support the palaces on the Upper Tigris, and situated like them in a break in the city walls. The mounds known as the Kasr, and that of Amran, in like manner most probably supported the palaces which excited the wonder of the Greeks; but as not one stone has been found, or any harder material than the usual sun-dried bricks of the country,

it is not to be wondered at that they have so completely lost their original form as to be perfectly unintelligible, except from the analogy derived from those of Nineveh.

More careful explorations and measurements may enable the topographer to determine the sites of many buildings whose names are known only from history; and much useful information may yet be thus obtained; but I fear little of an architectural character can now be hoped for among any of the mounds of the ruined city of Babylon.



124. Plan of Babylon.

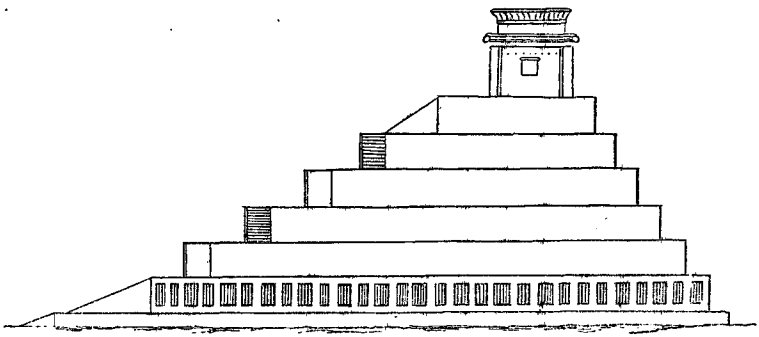
A few miles to the south-west of Babylon stands a great mound now known as the Birs Nimroud. This has recently been explored by Colonel Rawlinson, and from the inscriptions found among the ruins it is ascertained to be the remains of the Temple of the Seven Spheres at Borsippa.

It consists, as is shown in the woodcuts (Nos. 125 and 126), of an extensive basement, about 6 ft. in height, on which stands a pyramid of 6 stories, averaging somewhat less than 20 ft. each in height, and every story 42 ft. less in horizontal dimensions than the one below it.

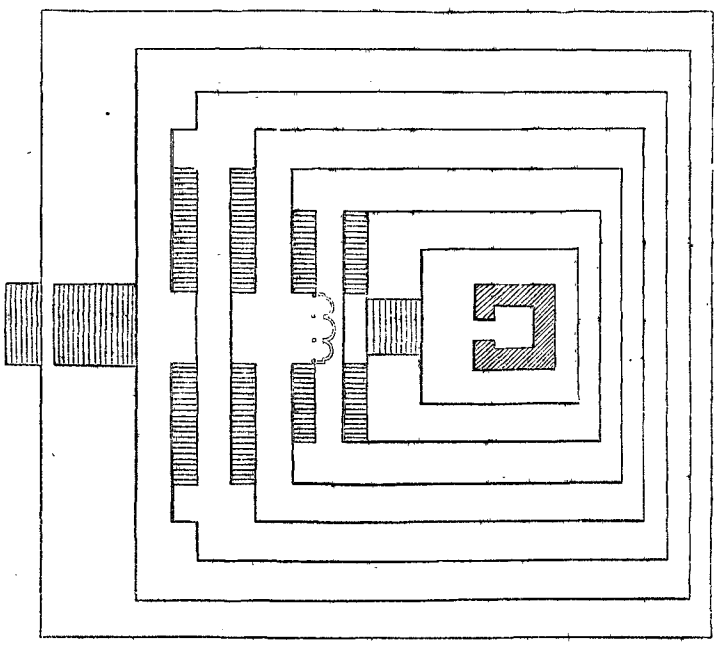
They are not placed concentrically one upon the other. Towards the front the platforms are 30 ft. in extent, and consequently are 12 ft. in the rear. On the sides they are equal, 21 ft. each.

On the upper platform now stands the fragment of a tower about 30 ft. in height, which once enclosed a chamber—the sanctum of the temple—following the analogy of the temple of Belus, as described by the Greeks, which the building resembles in almost every par-

ticular. There probably was also a shrine or image on the third platform. In front were the steps that led to the summit. The lower story was black, the colour of Saturn, and panelled like the new building discovered at Khorsabad; the next orange, the colour of Jupiter; the third red, emblematic of Mars; the fourth yellow, belong-



125. Restored Elevation of the Birs Nimroud. Scale 100 ft. to 1 in.



126. Restored Plan of the Birs Nimroud. Scale 100 ft. to 1 in.

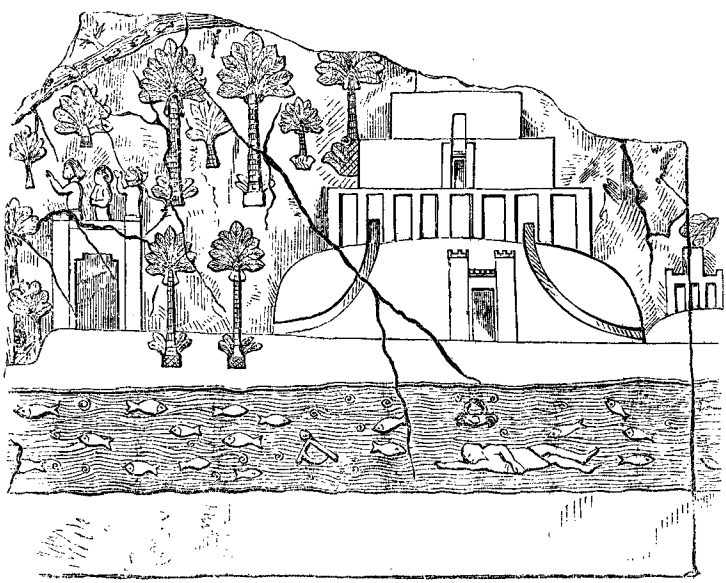
ing to the Sun; the fifth and sixth green and blue respectively, as dedicated to Venus and Mercury; the upper probably white, that being the colour belonging to the Moon, whose place in the Chaldean system would be the uppermost.

These peculiarities confirm so completely the Greek descriptions of the temple of Belus, and of the seven coloured walls of Ecbatana, that we may feel confident of having a nearly perfect restoration of at least one of the principal forms of Babylonian temples.

The inscriptions of Nebuchadnezzar mention, besides this temple at Borsippa, several others, which he considered as more important. As all traces of these, however, are lost, it is probable that they were of a different form, perhaps more like the temples of Egypt or Greece, but constructed of more perishable materials. If of the same pyramidal form as this, such great masses could hardly have disappeared.

Another small temple of the same form, but only three stories in height, has been discovered at Mugheyr, in Southern Babylonia. It is principally interesting as confirming in every respect what has been said of the form and plan of that of Borsippa, which, though explored to a considerable extent by Colonel Rawlinson, has not been so completely excavated as to render all the details absolutely certain without confirmation from other quarters.

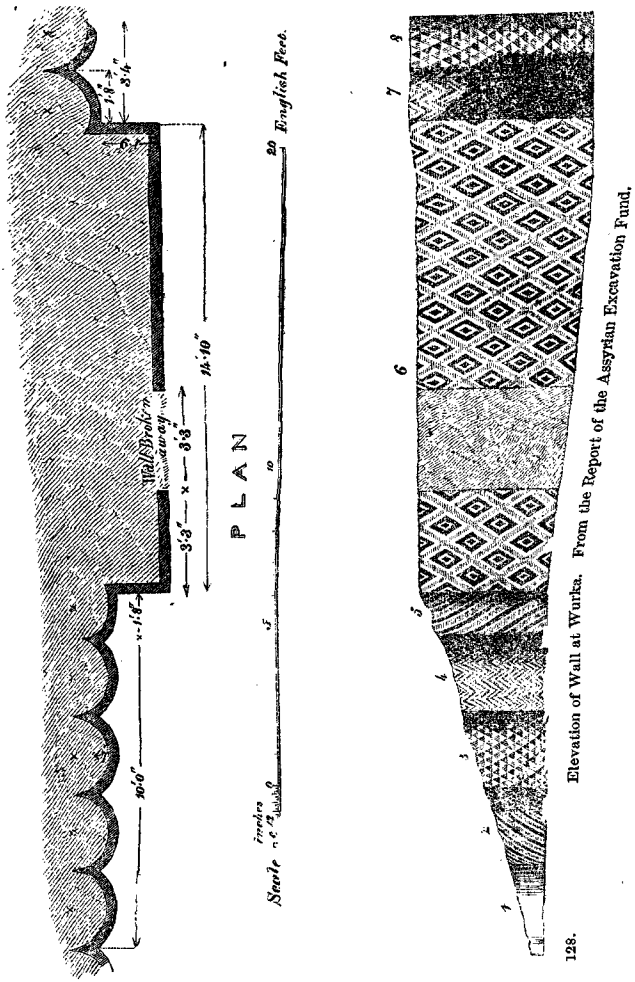
Contemporaneous with these discoveries is that of a bas-relief woodcut No. 127) of a temple rising in diminishing stages, which,



127. Representation of a Temple. From a Bas-relief from Koyunjik.

though the upper story is destroyed, curiously illustrates this subject. The temple itself seems to stand on an artificial mound. The base is panelled; a niche is shown on the upper platform; and it has all the peculiarities which have been alluded to in those temples we have just been describing.

These details enable us to realise to some extent what we lear from the Greeks of the great city of Babylon. It is certainly to b regretted that they are not more complete, for, though it is scarcel probable that the edifices of Babylon, as rebuilt by Nebuchadnezzar were either more extensive or more beautiful than those of Nineveh still it is the city best-known from the descriptions of the Greeks an of the sacred writings, so that we could more easily test the knowledg acquired from the excavations. Babylon was also the capital of th empire contemporary with Persepolis and Passargadæ, and thus he palaces formed the link that would enable us to connect, in a satis factory manner, the edifices and architecture of Assyria with those o Persia.



128. Elevation of Wall at Wurka. From the Report of the Assyrian Excavation Fund.

Knowing as we now do, from the inscriptions on the bricks, that none of the buildings now existing in or about Babylon are older than the reign of Nebuchadnezzar, it is evident that they never could have possessed either the historical or æsthetic value of the long series of bas-reliefs which adorned the palaces of the upper valley of the Tigris; and although we may regret having recovered so little of the famous city of Babylon, we may rest assured that by far the most valuable portion of the antiquities of Assyria is that which has already been exhumed in the Northern province.

The only other city of Babylonia which has yielded any important architectural results is Wurka, situated in the marshes to the south of Babylon. The mounds here are of immense extent, but composed principally of coffins and tombs, supposed to be of the Sassanian age, the place having for centuries been used as a burial-place for the surrounding nations, as Kerbela and Mesjid Ali are at the present day, from some supposed sanctity attached to the spot.

The principal building hitherto explored is a palace called by the natives Wuswus: it is a rectangle 246 ft. by 173, with one entrance, but no other opening in its external wall. Internally it seems to have consisted of one large oblong court, at the upper end of which were the state apartments, and on the left-hand side a series of small chambers, forming the private apartments of the palace.

Externally the whole of the walls were ornamented by reedings and panels, like those of the newly discovered building at Khorsabad, or the base of the Birs Nimroud.

Another building, called Bonarieh, was ornamented in a similar manner, but with this additional peculiarity, that the walls were covered with a mosaic formed of small cones, the bases of which were dipped in colours, and arranged in various patterns, as shown in the woodcut (No. 128). The style of ornament is elegant, and was probably the same as that painted on the plaster of the walls of the other buildings, and which has consequently perished from the lapse of time.

CHAPTER II.

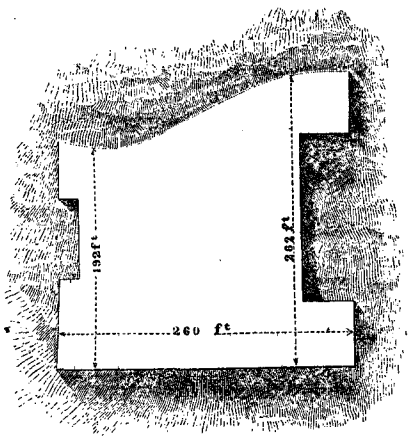
PERSIA.

CONTENTS.

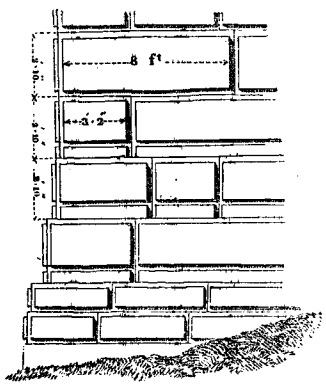
Buildings at Passargadæ — General appearance of Ruins at Persepolis — Propylæa — Palace and Tomb of Darius — Halls of Xerxes — Susa — Fire Temples — Tomb of Cyrus.

FROM the time of Nebuchadnezzar the history of this style of architecture is continued in a direct line for about two centuries and a half by the Persians, who succeeded to the arts, as well as to the empire, of the Babylonians. Their monarchs frequently resided at Babylon, and no doubt added to its buildings; but their own first capital was Passargadæ, where Cyrus and Cambyses resided from 560 B.C. to 522. This was succeeded by Istakr, or Persepolis, which was the principal capital of Darius Hystaspes, of Xerxes, and of all the kings of the Achæmenian dynasty, though they all certainly resided occasionally at Susa, and erected edifices there equal to those of their native metropolis, if not surpassing them in splendour.

Besides these, remains of the architecture of the Achæmenidæ are found at Hamadan, and even as far north as Teheran; but the principal buildings are at Persepolis and its neighbourhood, which was the favourite residence of these monarchs during the most brilliant period of the dynasty.



129. Platform at Passargadæ.[1]



130. Elevation of Masonry at Passargadæ.

[1] The woodcuts in this chapter, except the restorations, are taken from Flandin and Coste's Perse Ancienne, except where the contrary is mentioned.

In their present state the remains at Passargadæ are, perhaps, more interesting to the antiquary than to the architect, the palaces on the plain being so ruined that their architectural arrangements cannot be understood or restored.

On the side of a hill overlooking the plain is a platform of masonry (woodcut 129) which originally supported either a temple or fire-altar, but this has now entirely disappeared, and the structure is only remarkable for the beauty of its masonry and the largeness of the stones with which it is built. These are bevilled (woodcut 130) not only at their joints but often on their faces with the same flat sinking as is found in all the Jewish works at Jerusalem, and sometimes in Greek buildings of the best age. Thus an ornament of great beauty and elegance is formed out of what would otherwise be merely a plain mass of masonry.

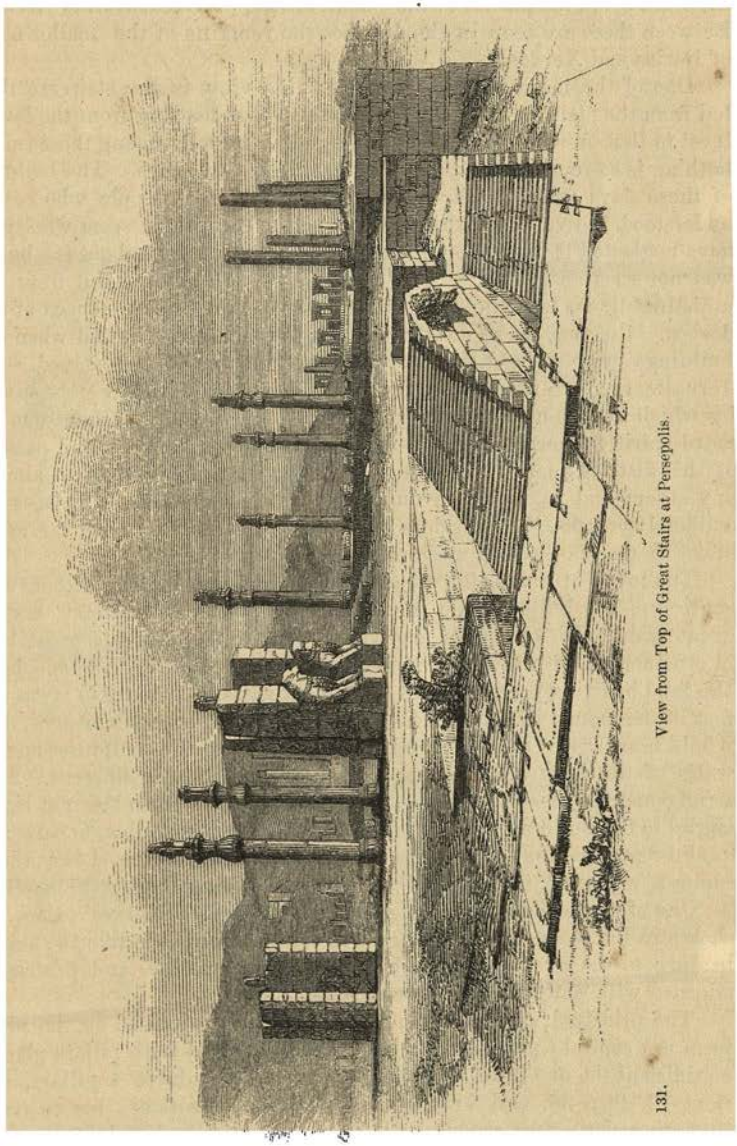
On the plain are the foundations of several large buildings, probably palaces, temples, or basilicas, but all so completely destroyed that it is now impossible to say what their original form or destination may have been. One pillar only is now standing, a plain shaft, without capital or base, and more like an Indian *lât* than a column destined to support a roof.

Persepolis.

Turning from these scattered remains, we find on the great terraced platform at Persepolis by far the most remarkable group of ancient buildings now existing in this part of Asia. It so happens that the ruins at Persepolis are an exact complement to the style described in the last chapter, supplying what was there wanting, and enabling us to understand much that would probably for ever have remained a mystery without it.

At Nineveh, as we have seen, all the pillars, the roofs, and the constructive parts of the building, which were of wood, have disappeared, and left nothing but the massive walls, which, falling, and being heaped the one on the other, have buried themselves and their ornaments till the present day. At Persepolis, on the contrary, the brick walls, being thinner and exposed on the bare surface of the naked rock, have been washed away by the storms and rains of 2000 years, leaving only the skeletons of the buildings, but which fortunately in the rocky country of Persia the architect constructed of stone. We have thus at Persepolis, if I may use the expression, all the bones of the building, but without the flesh; at Nineveh, the flesh, but without the bones that gave it form and substance. At the same time there are still so many points common to both styles as to leave no doubt of their identity, and to enable us to complete the whole by putting together the two sets of materials. The principal discrepancy appears to have been in the purposes to which the buildings were appropriated; those at Nineveh being residences, though it may be sacred residences, of the kings; while those at Persepolis partook certainly more of the temple character. The latter were all separate halls of state, appropriated to the great ceremonial pageants of royalty,

which were always, more or less, conjoined with religious observances, and they do not seem to have been residences in the usual acceptation of the term. The hareem, the family, and dependants of the king must



View from Top of Great Stairs at Persepolis.

131.

either have resided in buildings on the rock, which, composed of inferior materials, have been washed away, or have dwelt in the neighbouring palace in the town of Istakr, or in some of the buildings on the plain which are now in ruins.

The general appearance of the ruins, as they at present stand, will be seen from the woodcut (No. 131). The principal mass in the foreground on the left is the Propylæa of Xerxes, and behind that and to the right stand the pillars of the Chehil Minar, or Great Hall of Xerxes. Between these are seen in the distance the remains of the smaller halls of Darius and Xerxes.

One of the most striking points in this view is the staircase that led from the plain to the platform, and also that leading from the lower level to that on which the great hall stood. Indeed, among these ruins, nothing is so remarkable as these great flights of steps. The builders of those days were, so far as we know, the only people who really understood the value of this feature. The Egyptians seem wholly to have neglected it, and the Greeks to have cared little about it: but it was not so at Nineveh, where, so far as we can understand from the indistinct traces left, the stairs must have been an important part of the design. But they were so situated that they were not buried when the buildings were ruined, and consequently have been removed. At Jerusalem too we read that, when the Queen of Sheba saw "the ascent by which Solomon went up to the house of the Lord, there was no more spirit in her." Indeed, in all the ancient temples and palaces of this district, more attention is paid to this feature than to almost any other; and from the favourable situation of all these palaces on artificial terraces, the builders were enabled to do this with far more effect than any others in ancient or in modern times.

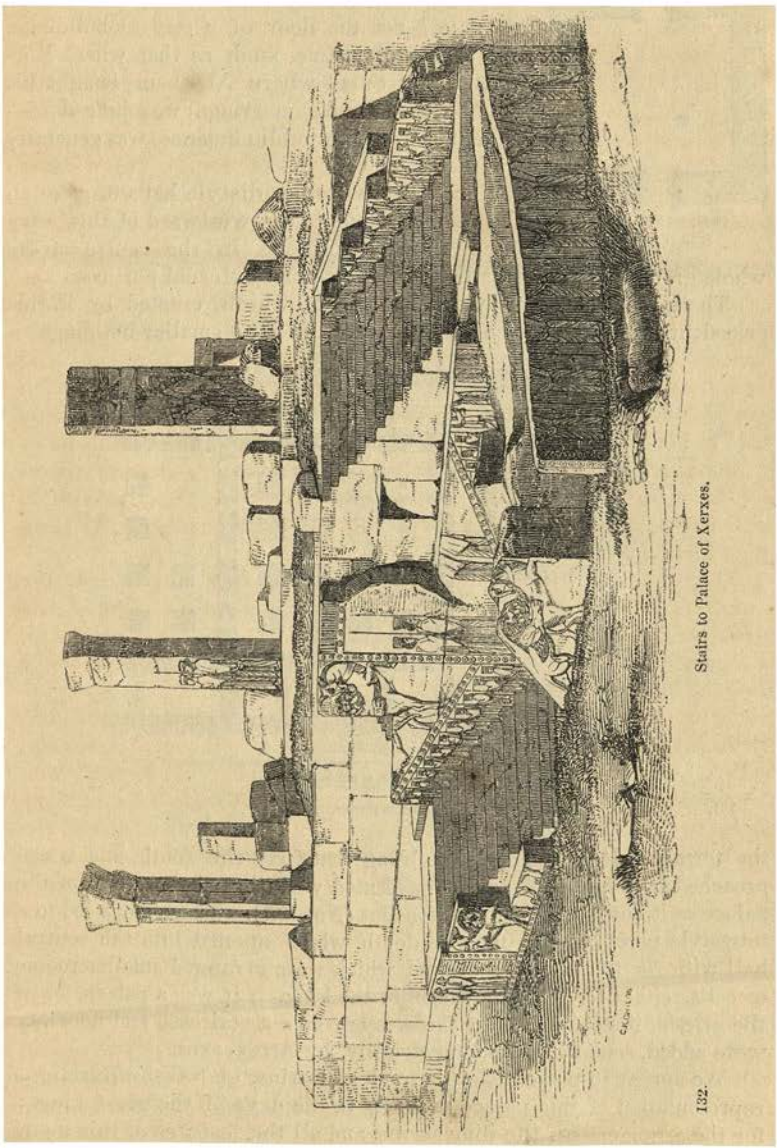
The lower or great staircase at Persepolis is plain, and without any sculpture, but built of the most massive Cyclopean masonry, and of great width and very easy acclivity. That in front of the great hall is ornamented with sculpture in three tiers, representing the people of the land bringing presents, and the subject nations tribute, to lay at the feet of the monarch, combined with mythological representations; the whole bearing a very considerable resemblance to the sculptures on the walls of the Assyrian palaces, though the position is different. The arrangement of these stairs, too, is peculiar, none of them being at right angles to the buildings they approach, but all being double, apparently to allow processions to pass the throne, situated in the porches at their summit, without interruption, and without altering the line of march.

One of these flights, leading to the platform of Xerxes' palace, is shown in the woodcut (No. 132). In arrangement it is like the stairs leading to the great terrace, but very much smaller, and profusely adorned with sculpture.

The principal apartment in all the buildings situated on the platform is a central square hall, whose floor is studded with pillars placed equidistant the one from the other. The smallest have 4 pillars, the next 16, then 36, and one has 100 pillars on its floor; but to avoid inventing new names, we may call these respectively, distyle, tetrastyle, hexastyle, and decastyle halls, from their having 2, 4, 6, or 10 pillars on each face of the phalanx, and because that is the number of the pillars in their porticos when they have any.

The building at the head of the great stairs is a distyle hall, having

4 pillars supporting its roof. On each side of the first entrance stands a pair of human-headed winged bulls, so nearly identical with those found in Assyrian palaces as to leave no doubt of their having the same

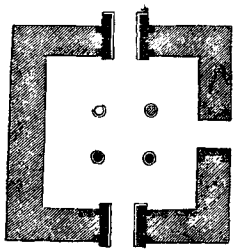


Stairs to Palace of Xerxes.

132.

origin. At the opposite entrance are two bulls without wings, but drawn with the same bold, massive proportions which distinguish all the sculptured animals in the palaces of Assyria and Persia. The other entrances are destroyed, and the foundation of only one remaining; but

this, with the foundations of the walls, leaves no room to doubt that the annexed woodcut (No. 133) is a true representation of its ground-plan.



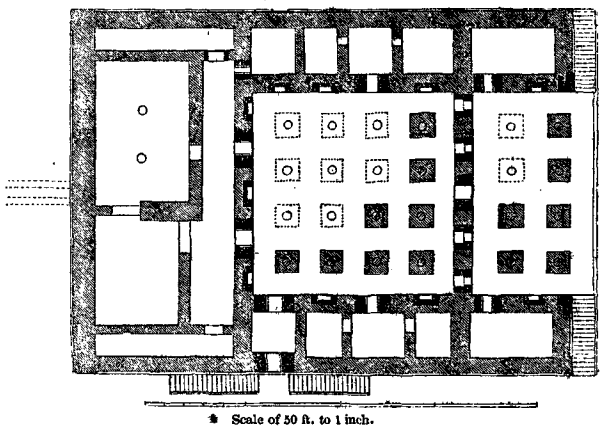
Scale 100 ft. to 1 inch.

133. Propylæa.

Nor can it be doubted that this is one of those buildings so frequently mentioned in the Bible as a "gate," not the door of a city or buildings, but a gate of justice, such as that where Mordecai sat at Susa—where Abraham bought his field—where Ruth's marriage was judged of—and, indeed, where public business was generally transacted.

There are two other distyle halls or gates on the platform: one to the westward of this, very much ruined; and one in the centre of the whole group, which seems besides to have had external porticos.

There are two tetrastyle halls, one of which, erected by Darius (woodcut No. 134), is the most interesting of the smaller buildings on



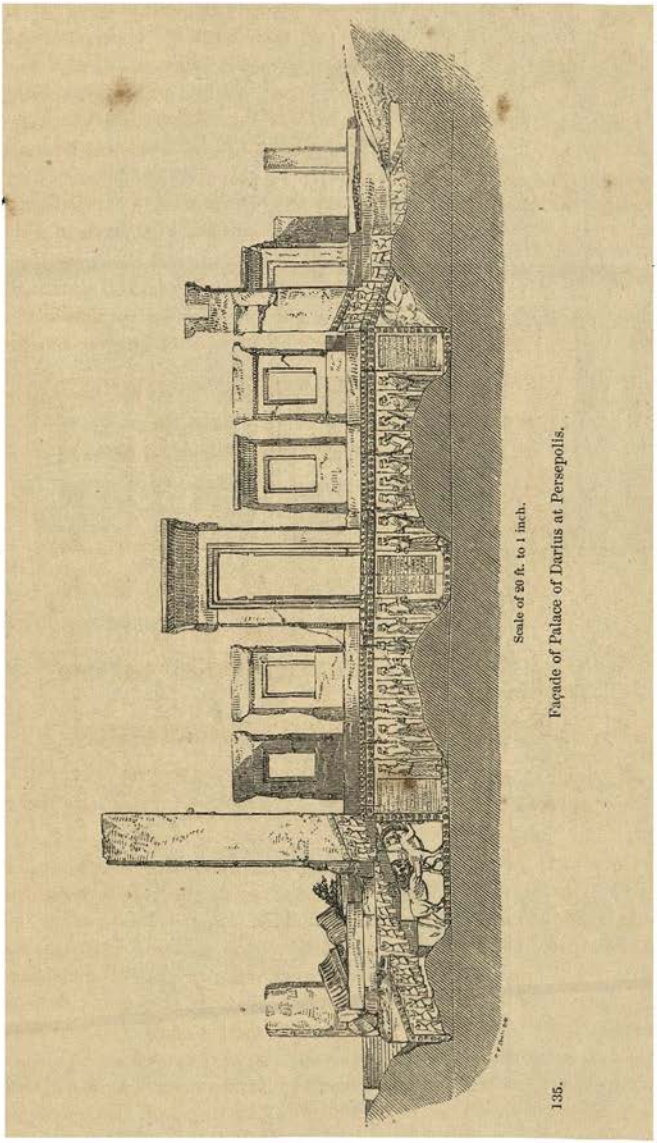
Scale of 50 ft. to 1 inch.

134. Palace of Darius.

the terrace. It is the only building that faces the south, and is approached by a flight of steps, represented with the whole façade of the palace as it now stands in the woodcut (No. 135). These steps led to a tetrastyle porch, two ranges in depth, which opened into the central hall with its 16 columns, around which were arranged smaller rooms or cells, either for the occupation of the king, if it was a palace, or of the priests, if a temple. In the western side a staircase and doorway were added, somewhat unsymmetrically, by Artaxerxes.

We appear to possess, in the tomb of Darius, at Naksh-i-Rustam, a representation of this palace as it was in the days of the great king—for the arrangement, the dimensions, and all the features of this tomb, as represented in woodcut No. 136, coincide so exactly with the existing remains of the palace as to leave little or no doubt but that the one is an exact copy of the other; so much so as to enable us to supply from the rock-cut example those parts which are wanting in

the built palace. It appears certain that the palace originally supported a raised platform, or *talar*, on its roof, identical with that represented in the tomb, on which the fire-altar was placed at which the

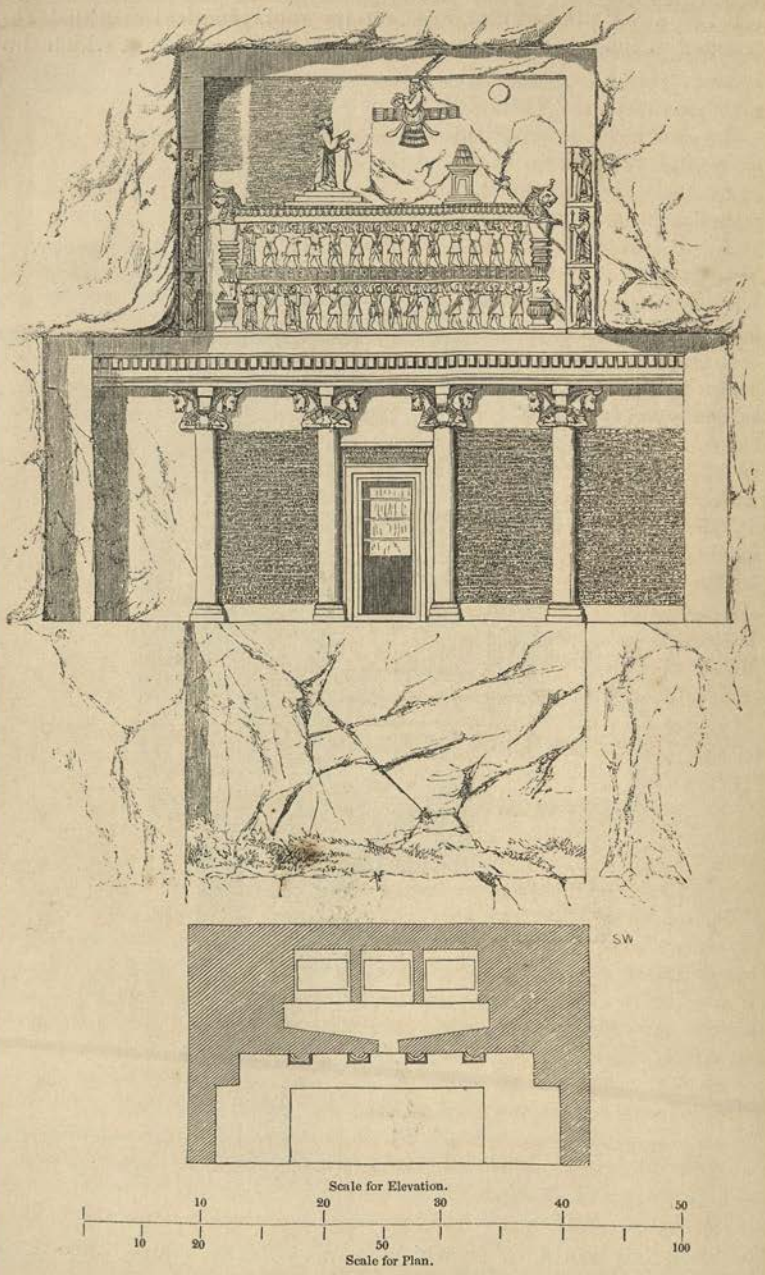


Scale of 20 ft. to 1 inch.

135. Façade of Palace of Darius at Persepolis.

king used to worship, or on which he was wont to exhibit himself to his subjects on state occasions.

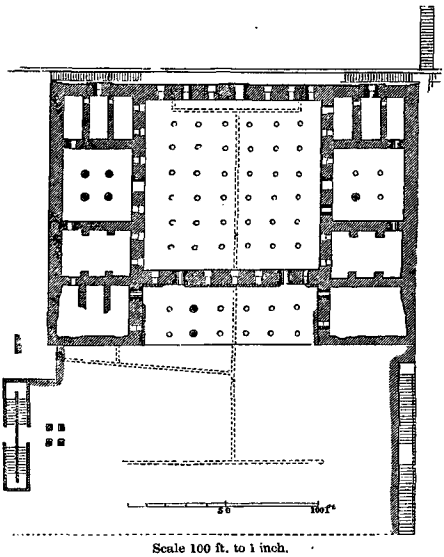
The other tetrastyle hall is similar to this, only plainer and somewhat smaller.



136. Tomb of Darius at Naksh-i-Rustam, representing the façade of his palace surmounted by a Talar.

Turning from these to the hexastyle halls, the smallest but most perfect (woodcut No. 137) is that standing on the southern edge of the upper platform, the inscriptions on which certainly prove it to have been built by Xerxes.

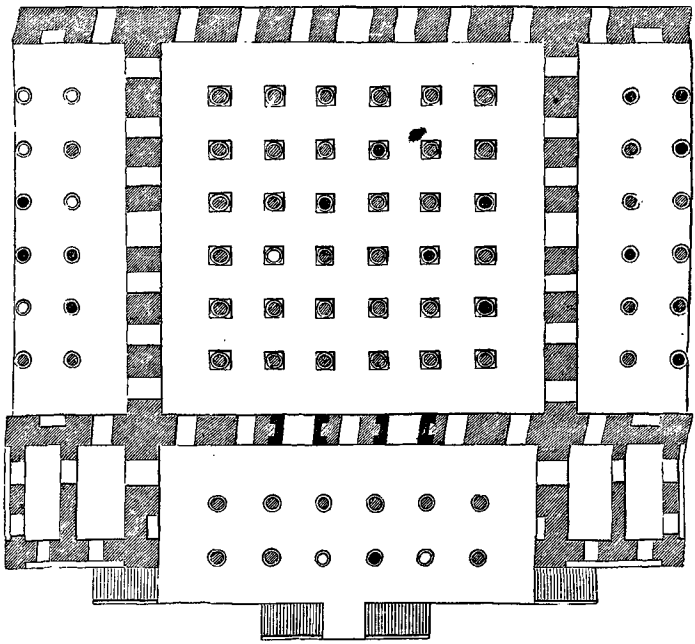
Its platform is approached by 2 flights of steps, that on the east being the one represented in woodcut No. 132, and there are indications of a tetrastyle hall or gate having existed on its summit. That to the west is simpler. The hall itself had a portico of 12 columns, and on each side a range of smaller apartments, the two principal of which had their roofs supported by 4 pillars each.



Scale 100 ft. to 1 inch.

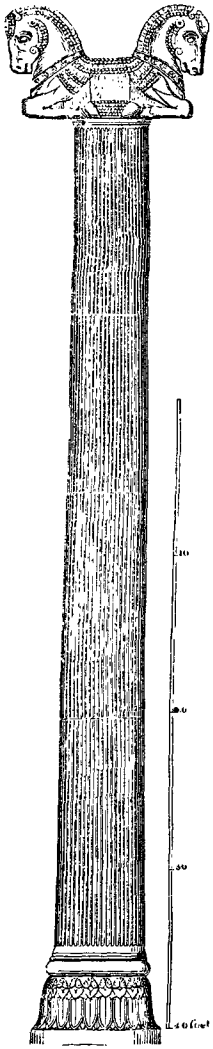
137. Palace of Xerxes.

The great value of this building, however, is that it enables us to understand the arrangement of the great Hall of Xerxes—the Chehil Minar—the most splendid building of which any remains exist in this part of the world. From the annexed plan (woodcut No. 138) it will

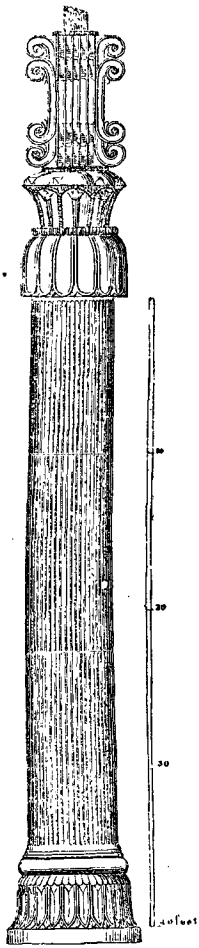


138. Restored plan of Great Hall of Xerxes at Persepolis. Scale 100 ft. to 1 in.

be seen that the plan of the whole central part is identical with that of the building just described, as the bases of all the 72 columns still exist in situ, as well as the jambs of the 2 principal doorways shaded darker in the plan. The walls only are restored from the preceding illustration. Instead of the 2 distyle halls on each side, this had hexastyle porticos of 12 pillars each, like that in front; the angles between which were filled up with rooms or buildings, probably such as suggested in the plan.



139. Pillar of Western Portico.



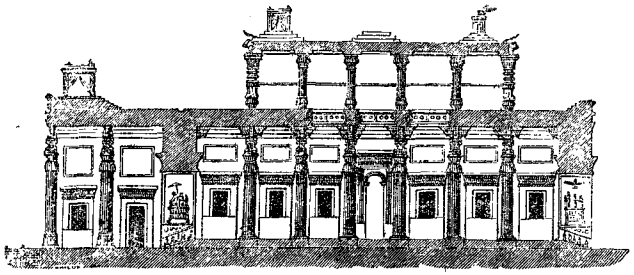
140. Pillar of Northern Portico.

Two orders of pillars were employed to support the roof of this splendid building, one, represented in woodcut No. 139, with double bull-capitals, like those of the porch of Darius's palace. These are 67 ft. 4 in. in height from the floor to the back of the bull's neck, or 64 ft. to the under side of the beam that lay between the bulls. The other order, with the Ionic volutes (woodcut No. 140), which is also that employed in the northern portico, and generally in interiors throughout, is nearly identical, as far as the base and shaft are concerned, except in height. The capital, however, differs widely, and is 16 ft. 6 in. in height, making an order altogether 9 ft. 7 in. less than the external one, the difference being made up by brackets of wood, which supported the beams of the roof, internally at least, though externally the double bull capital probably surmounted these Ionic-like scrolls.

There is no reason to doubt that these halls also had platforms or *talars* like the smaller halls, which besides would serve to shelter any opening in the roof; though in the present instance it seems

very doubtful if any such openings or skylights existed or were required.

Thus arranged, the section of the buildings would be as shown in the woodcut (No. 141); and presuming it to be sculptured and



141. Restored Section of Hall of Xerxes. Scale 100 ft. to 1 in.

painted as richly as other buildings of its age and class, which it no doubt was, it was not only one of the largest, but one of the most splendid buildings of antiquity. In plan it was a rectangle of about 300 ft. by 350, and consequently covering 105,000 square ft.; it was thus larger than the hypostyle hall at Karnac, or any of the largest temples of Greece or Rome. It is larger, too, than any mediæval cathedral except that of Milan; and although it has neither the stone roof of a cathedral, nor the massiveness of an Egyptian building, still its size and proportions, combined with lightness, and the beauty of its decorations, must have made it one of the most beautiful buildings ever erected, and both in design and proportion far surpassing those of Assyria, though possessing much of detail or ornament so similar as to be almost identical in style.

There is no octastyle hall at Persepolis, and only one decastyle. In this instance the hall itself measured about 225 ft. each way, and had 100 pillars on its floor; still it was low in proportion, and devoid of lateral porticos, and consequently by no means so magnificent a building as the great hall of Xerxes. The portico in front was 2 ranges in depth, and flanked by gigantic bulls; but as the whole height was barely 25 ft., it could not have been a remarkable or pleasing object. Indeed, the sculptures on the jambs of the doorways are the most interesting part of this building, representing the king on his throne, and various mythological subjects, on a more extensive scale than those similarly situated in the other buildings of the platform: for it is probable that in the other palaces these subjects were painted on the internal walls, as was done in those Assyrian halls which were not revêted with slabs. With an appropriateness that cannot be too much praised, sculpture seems only to have been used in parts of the building exposed to atmospheric injury, but at the same time also always to have been employed there in preference to painting.

Besides these there are the remains of several buildings on the plain, and within the precincts of the town of Istakr a building still

called the Hareem of Jemsheed, which may in reality have been the residence of the Achæmenian kings. It certainly belongs to their age, and from the irregularity of its form, and its general proportions, looks very much more like a residence, properly so called, than any of the monumental erections on the neighbouring platform of Persepolis.

Susa.

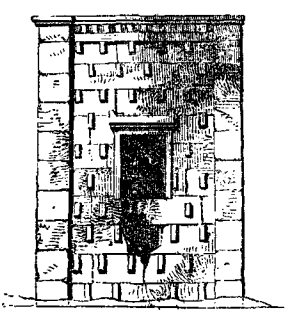
The explorations of Mr. Loftus at Susa in 1850 have laid bare the foundations of a palace almost identical with the Chehil Minar at Persepolis. It is, however, much more completely ruined, the place having long been used as a quarry by the inhabitants of the neighbouring plains, so that now only the bases of the pillars remain in situ, and fragments of the shafts and capitals strewed everywhere about, but no walls or doorways, or other architectural members which would enable us to supply anything wanting at Persepolis.

The bases seem to be of the same form and style as those at Persepolis, but rather more richly carved, though the bull capitals do not appear to have been so well executed.

Inscriptions round the bases of the pillars inform us that it was erected by Darius and Xerxes, but repaired or restored by Artaxerxes Mnemon, who added the inscriptions. In all probability it is the identical hall in which the scenes described in the book of Esther took place. The foundations of other parts of this palace might be no doubt laid bare by further excavations; but the ruin of the place has been so complete, that little of interest in an architectural point of view can be looked for. Below these Persian ruins are probably buried the remains of long-preceding dynasties, which deeper excavations would lay bare, and afford a rich harvest to the historical explorer.

Fire Temples.

Near the town of Istakr, and opposite the tombs of Naksh-i-Rustam, stands a small tower-like building, represented in the woodcut. The lower part is solid; the upper contains a small square apartment, roofed by two great flat stone slabs: access to this is obtained from a doorway situated at some distance from the ground.



142. Kaabah at Istakr. No scale.

Both the traditions of the place, and the knowledge we have of the forms of the Magian religion, point to this as one of the fire temples of the ancient Persians. Its roof is internally still black, probably with the smoke of ancient fires, and, though simple and insignificant as an architectural monument, it is interesting as the only form of a temple apart from regal state which the ancient Persians possessed.

Another, almost identical in form, is found at Passargadæ. The celebrated Kaabah at Mecca, to which all the Moslem world now bow in prayer, is probably a third; and we possess an Assyrian picture of a temple very much resembling this. It is found on the end of a block of marble, called Lord Aberdeen's Black Stone, which is covered by the annals of a king who reigned at Nineveh in the 7th century B.C.

TOMBS.

Little requires to be said of the tombs of the Persians: that of Darius is represented in plan and elevation in woodcut No. 136, and, as before remarked, on the rock is a copy of the façade of his palace. Internally, three small cells contained the remains of the king, with those of the persons, probably his favourite wife or wives, for whom he had destined that honour. Close by this, at Naksh-i-Rustam, are four others, and in the rock behind Persepolis three more tombs of the Achæmenian kings, identical with these in all essential respects, but still with such a difference in workmanship and detail as would enable a careful architectural student easily to detect a sequence, and so affix to each, approximately at least, the name of the king to whom it belongs. Unfortunately, that of Darius only is inscribed; but his position in the dynasty is so well known, that, starting from that point, it would be easy to complete the series with the others.

The one exception to this rule is the structural tomb at Passargadæ, which, from the description of the Greeks, we know certainly to be that of Cyrus. It consists of a small temple-like chamber, situated on the top of a small pyramid of stone steps, and surrounded by a peristyle or cloister of columns at some distance from the building itself.

143. Tomb of Cyrus.

Referring to the woodcuts Nos. 125 and 126, representing the temple at Borsippa, and bearing in mind how exactly this represents

he temple, or, as it was as frequently called by the Greeks, the tomb of Belus, we have no difficulty in recognising the source whence this form of sepulture is derived.

The building before us is in fact a reproduction, on a small scale, of the tomb of the founder of the Babylonian dynasty. Like it, it consists of a pyramid of 7 stories, with a chamber or cell in the upper one. In this instance the chamber is proportionally magnified, and the stories become mere steps, but the form and arrangements are the same, and this is in fact the only representation we have of one at least of the Babylonian modes of sepulture.

CHAPTER III.

SYRIA.

CONTENTS.

Buildings of Solomon — Second Temple at Jerusalem — Palmyra.

CHRONOLOGICAL MEMORANDA.

Solomon builds Temple at Jerusalem	B.C. 1005
Nehemiah rebuilds Temple	445
Herod the Great repairs and rebuilds Temple	17

WHEN we turn from Assyria to Syria, we have unfortunately nothing but the memories of the past to guide us in our researches into the history of the art of that country. Tyre and Sidon, the great commercial cities of the ancient world, are no more, and, were it not for history, even their site would be unknown. Nowhere throughout the country have any remains yet been discovered that can with certainty be said to be older than the Christian era; but it by no means follows that such may not exist, for, so far as I know, no traveller has yet visited that country capable of discriminating between what is really old and what must be ascribed to a more modern date.

Even Jerusalem herself, one of the most remarkable cities of the ancient world, is almost without one vestige of her pristine greatness. It is true that the site of her celebrated temple is still known, and part of the terrace-wall which supported it still exists; but it is very uncertain if even this wall can be dated earlier than the time of Herod, who rebuilt the temple just before the birth of Christ.

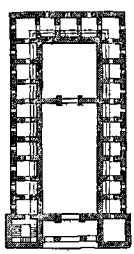
This absence of material remains is, however, in some measure compensated for in the fact that we have more detailed descriptions of the buildings of Jerusalem than of those of almost any ancient city known. From those in the Bible, with the paraphrase of them in Josephus, we are able to acquire a tolerably distinct idea of the buildings of Solomon, and from the descriptions of the latter author we can also understand the form of the temple as rebuilt by Herod. Till, however, the palaces of Assyria were disinterred, and those of Persepolis examined, we had but little to guide us in our restorations, but now it requires only a little more time and patient industry to make all clear.

BUILDINGS OF SOLOMON.

No building, for instance, of antiquity so much resembles the temple of Solomon as the so-called palace of Darius at Persepolis

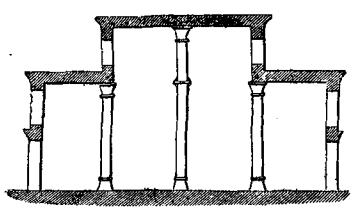
(woodcuts No. 134 and No. 135), only that the latter is by far the larger of the two, being 50 ft. in front, while Solomon's temple was only 30 ft. (20 cubits), and had consequently only 2 pillars in its porch instead of 4. In both buildings the porch opened into the largest hall of the building; and beyond this, at Jerusalem, was the Holy of Holies, a cube of 30 ft. each way. The arrangement of the innermost part of the temple-palace of Darius cannot be clearly made out. No doubt it differed from the Jewish temple, as the objects for which the buildings were designed were different; but the small chambers on the side, the square mass on either side of the porch, and above all the form of the capitals of the Persepolitan pillars (woodcut No. 140), explain the corresponding arrangement in the Jewish temple far more completely than anything elsewhere in antiquity can do.

Another curious circumstance mentioned by Josephus,[1] but not in the Bible, is that the Jewish temple had an upper story of wood on its roof, a *talar*, in short, such as that represented (woodcut No. 136) as carved on the tomb of Darius. Its use in the Jewish temple is by no means so clear, though its existence may serve to explain the discrepancy between the measurements given in the books of Kings and Chronicles of the height of the building, the probability being that the temple itself was 45 ft. high, and the *talar*, and probably the eastern towers, as much more. The parts and dimensions of Solomon's temple were, 1st, a porch, 30 ft. wide by 15 ft. deep; 2nd, a pronaos, 60 ft. by 30 ft., and beyond that a naos or sanctuary, 30 ft. cube; the lower chambers were only 7½ ft. wide by 10½ ft.; so that the whole external dimensions of the building probably were rather more than 60 ft. in width by 120 ft. in length, or less than an ordinary parish church in this country.



144. Plan of Solomon's Temple. Scale 100 ft. to 1 inch.

The house of the Forest of Lebanon still more distinctly resembled an Assyrian palace; the principal apartment being 150 ft. long by half that breadth, and 45 ft. in height, and, according to the description, its section seems to have been like the diagram in woodcut 145, though there is a discrepancy between the authorities that introduces some difficulty into the matter. The pillars, like those at Nineveh, were of cedar, and supported a roof of the same combustible and perishable material. Following Josephus we read that "Solomon built some of these (the walls) with stones of 10 cubits, and wainscoted the walls with other stones that were sawed, and were of great value, such as are dug out of the bowels of the earth for the ornament of temples. The arrangement



145. Diagram Section of Solomon's House.

[1] Ant. Jud., viii. 3, 2; xv. 11, 1. Bel. Jud., v. 1, 5.

of the curious work of these stones was in three rows, but the fourth was pre-eminent for the beauty of its sculpture, for on it were represented trees and all sorts of plants. These trees and plants covered the stones that were beneath them, and their leaves were wrought so wonderfully thin and subtile that they appeared almost in motion; but the rest of the wall up to the roof was plastered over, and as it were wrought over with various colours and pictures."[1] This is so exact a picture of what we have recently discovered in Assyria as to leave no doubt of the identity of the two styles of building. The same observation applies to the other works of Solomon as described by Josephus—the Porch of Judgment, the house of Pharaoh's daughter, and the house where he dwelt, which had another court within the porch, which was of like work. The historian's whole account of the banqueting-halls, pleasure-gardens, &c., might serve as well to describe one of the exhumed edifices on the banks of the Tigris as anything which ever existed at Jerusalem. This analogy, when a little more study has been bestowed on the subject, will enable us almost certainly to restore the whole style by comparing the existing remains in the one place with the description of those in the other.

THE SECOND TEMPLE.

Although it is anticipating somewhat on the chronological order of the book, and transgressing a rule which in other parts has been strictly adhered to, of not attempting the restoration of buildings from mere verbal descriptions, still the last temple of Jerusalem is so interesting, both from its history and associations, that it may well claim to be an exception.

This was at all times regarded by the Jews as the *Second* Temple, though it appears to have undergone repairs in the time of Herod amounting to a complete rebuilding. The temple itself no doubt stood on the foundations of that of Nehemiah. It was situated at the south-western angle of the enclosure now called the Haram-es-scherref, and was exactly one stadium or 600 Greek ft. each way. On 3 sides it was surrounded by double porticos or cloisters of 2 rows of columns, that to the east being called Solomon's, probably from one which had been built there by him. To the south stood the magnificent Royal porch, or Stoa Basilica, erected by Herod. This consisted of 4 rows of Corinthian columns, 40 in each row, and consequently 15 ft. apart from centre to centre. The outer aisles were 30 ft. in width, the central 45 ft, or two and three intercolumniations respectively. The central aisle terminated in a bridge which, spanning the intermediate valley, led direct to the city.

These porches, with the space immediately within them, were called the court of the Gentiles, and were separated from that appropriated exclusively to the children of Israel by a low railing; within which steps led to an upper platform, on which stood the Temple, properly so called.

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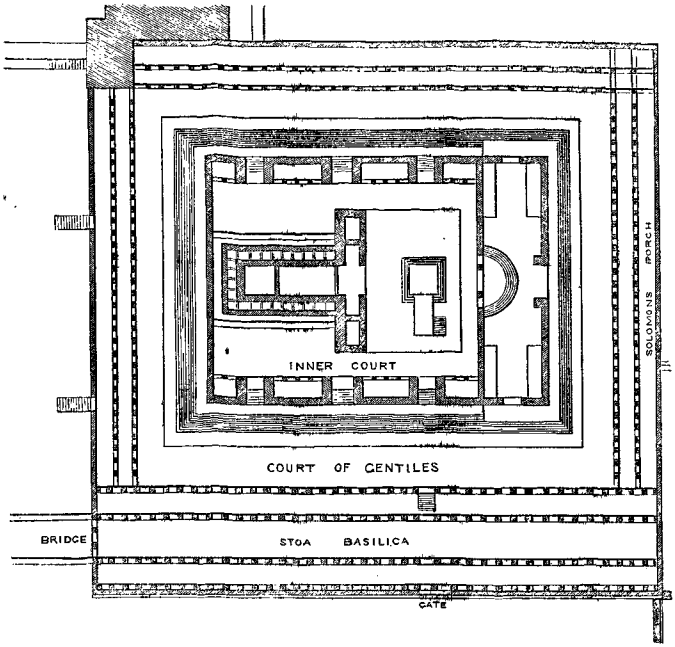
[1] Josephus, Ant. Jud., viii. v. 2.

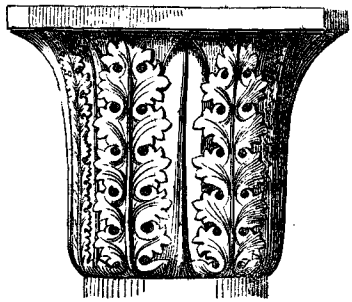


146. Plan of Temple at Jerusalem, as rebuilt by Herod. Scale 200 ft. to 1 in.

This had four gates on the north side, and as many on the south, three on each side leading into the inner court, the two most eastern to the women's court. To the east there were also two gates, more magnificent than the rest; the first leading into the women's court, the second from it into the inner court: both seem to have been adorned with all the art the Jews were capable of lavishing on such objects. In the inner court stood the altar, in the axis of the building, and beyond that the temple or holy house itself, somewhat larger than Solomon's, but built on the same plan, and with the evident intention of being an exact reproduction of it, although, judging from the evidently Roman character of the outer courts, it is more than probable that many features of Roman art were introduced into its details also.

Taken altogether, it must be confessed this was a very splendid building, though the temple or Naos itself was so small. Its substructures, of a class of masonry very similar to that found in the terrace at Passargadæ (woodcut No. 130), still strike every beholder with astonishment—the mass is so great, the stones so large, and the features altogether so bold. The Stoa Basilica was in itself as large as one of our finest Gothic cathedrals. The terrace, with its 10 great gateways, its inner porches, and last of all the temple itself, if it made up at all in richness for the smallness of its proportions, must have formed a group seldom surpassed, and almost justifying the encomiums which Josephus passes upon it.

Below the Stoa Basilica, and nearly in the centre of it, a vaulted passage led from the outside to a flight of steps leading up to the outer court of the temple. This passage is of bold, simple architecture, and without much ornament except one pillar, represented in the annexed woodcut, which is interesting as the only architectural fragment of ancient Jerusalem yet discovered, which seems to belong to a date even as early as the time of Herod. Externally the arch is now adorned by ornaments of the Byzantine period, and above stands the mosque El Aksah, and that of Omar, both built in the first century of the Hegira.



147. Capital of Pillar in subterranean entrance to Temple at Jerusalem. From a drawing by F. Arundale.

The Temple of the Sun at Palmyra is another building very similar to this. It consists of a cloistered enclosure of somewhat larger dimensions than that at Jerusalem, measuring externally 730 ft. by 715, with a small temple of an anomalous form in the centre. It wants, however, all the inner enclosures and curious substructures of the Jewish fane; but this may have arisen from its having been rebuilt in late Roman times, and consequently shorn of these peculiarities. It is so similar, however, that I cannot but look on it as a cognate temple to that at Jerusalem, though re-erected under another race of people.

A third temple, apparently very similar to these, is that of Kangovar in Persia. Only a portion now remains of the great court in which it stood, nearly of the same dimensions with those of Jerusalem and Palmyra, being 660 ft. by 568. In the centre are the vestiges of a small temple. At Aizaini in Asia Minor is a fourth, with a similar court: but here the temple is more important, and assumes more distinctly the forms of a regular Roman peristylar temple of the usual form, though still small and insignificant for so considerable an enclosure.

None of these are original buildings, but still, when put together and compared the one with the other, and, above all, when examined by the light which discoveries farther east have enabled us to throw on the subject, they may enable us to restore this style in something like its pristine form. At present they are but the scattered fragments of an art of which it is feared no original specimens now remain, and which can only therefore be recovered by induction from similar cognate examples of other though allied styles of art.

CHAPTER IV.

ASIA MINOR.

CONTENTS.

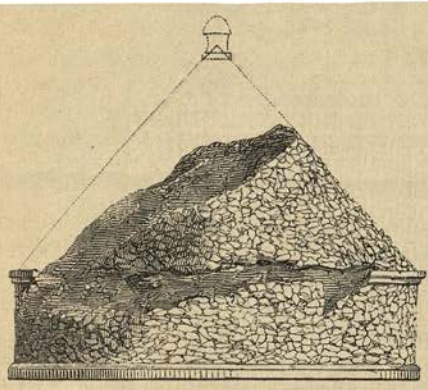
Historical notice — Tombs at Smyrna — Doganlu — Lycian tombs.

It is now perhaps in vain to expect that any monuments of the most ancient times, of great extent or of great architectural importance, remain to be discovered in Asia Minor; still it is a storehouse from which much information may yet be gleaned, and whence we may expect the solution of many dark historical problems, if ever they are to be solved at all.

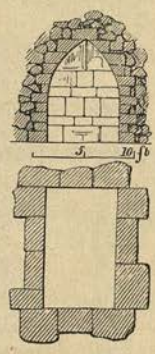
Situated as that country is in the very centre of the old world, surrounded on three sides by navigable seas opening all the regions of the world to her commerce, possessing splendid harbours, a rich soil, and the finest climate of the whole earth, it must have not only been inhabited at the earliest period of history, but must have risen to a pitch of civilization at a time preceding any written histories that we possess. We may recollect that, in the time of Psammeticus, Phrygia contended with Egypt for the palm of antiquity, and from the monuments of the 18th dynasty we know what rich spoil, what beautiful vases of gold, and other tribute of a rich and luxurious people, the Pout and Roteno and other inhabitants of Asia Minor brought and laid at the feet of Thothmes and other early kings many centuries before the Christian era.

At a later period (716 to 547 B.C.) the Lydian empire was one of the richest and most powerful in Asia; and contemporary with this, and for a long period subsequent to it, the Ionian colonies of Greece surpassed the mother-country in wealth and refinement, and almost rivalled her in literature and art. Few cities of the ancient world surpassed Ephesus, Sardis, or Halicarnassus in splendour; and Troy, Tarsus, and Trebisond mark three great epochs in the history of Asia Minor unsurpassed in interest and political importance by the recollections of any cities of the world. Excepting, however, the remains of the Greek and Roman periods—the great temples of the first, and the great theatres of the latter period—little that is architectural remains in this once favoured land. It happens also unfortunately that there is no great capital city—no central point—where we can look for monuments of importance. The defect in the physical geography of the country is that it has no great river running through it—no vast central plain capable of supporting a population sufficiently great to overpower the rest and to give unity to the whole.

So far as our researches yet reach, it would seem that the oldest remains still found in Asia Minor are the tumuli of Tantalais, on the northern shore of the gulf of Smyrna. They seem as if left there most opportunely to authenticate the tradition of the Etruscans having sailed from this port for Italy. One of these is represented in woodcuts No. 148 and 149. Though these tumuli are built wholly of stone,



148. Elevation of Tumulus at Tantalais. From Texier's Asie Mineure. 100 ft. to 1 in.



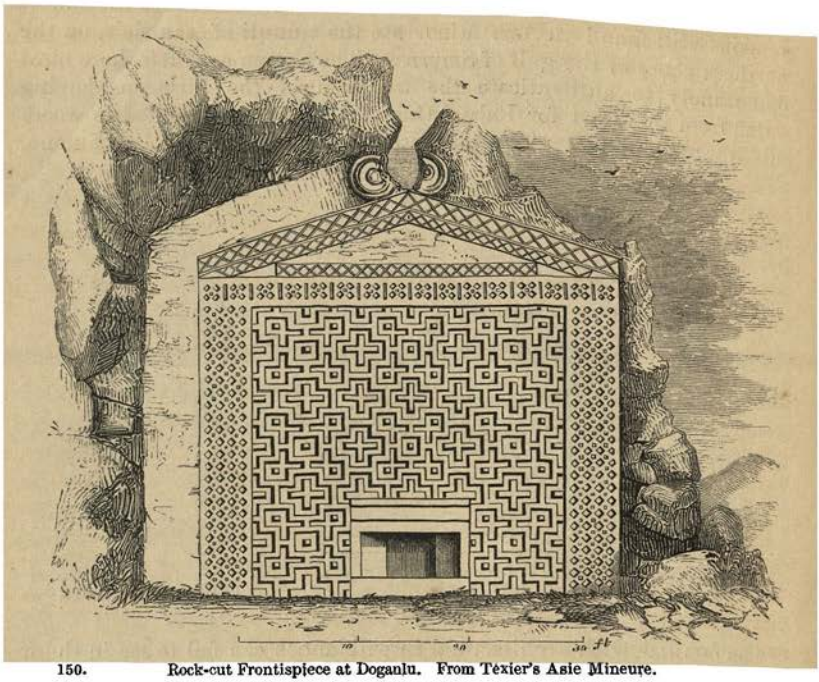
149. Plan and Section of Chamber in Tumulus at Tantalais.

no one familiar with architectural resemblances can fail to see in them a common origin with those of Etruria. The stylobate, the sloping sides, the inner chamber, with its pointed roof, all the arrangements indeed, are the same, and the whole character of the necropolis at Tantalais would be as appropriate at Tarquinii or Cæræ as at Smyrna.

The tumuli at Troy belonging to the same race are probably of about the same age; they are still unopened, and so are the later ones around the Gygæan Lake. If not already rifled, no excavation that could now be undertaken promises more fruitful results than an exploration of these sepulchres of the Lydians, and more especially that of Alyattes, so minutely described by Herodotus, and so interesting from its historical and ethnographic value.

Whether other tumuli exist elsewhere or not is by no means clear; but it seems more than probable that in the earliest times the whole of this country was inhabited by a Pelasgic race, who were also the first known occupants of Greece, and built the so-called Treasuries of Mycenæ and Orchomenus, and who sent forth the Etruscans to civilize Italy. If so, they would have left behind them no buildings but the sepulchres of their departed great ones; and if their history is to be recovered, it must be sought for in the bowels of the earth, and not in anything existing above ground.

Next to these in point of age and style comes a curious group of rock-cut monuments, found in the centre of the land at Doganlu. They are placed on the rocky side of a narrow valley, and unconnected apparently with any great city or centre of population. Generally they are called tombs, but there are no chambers nor anything about



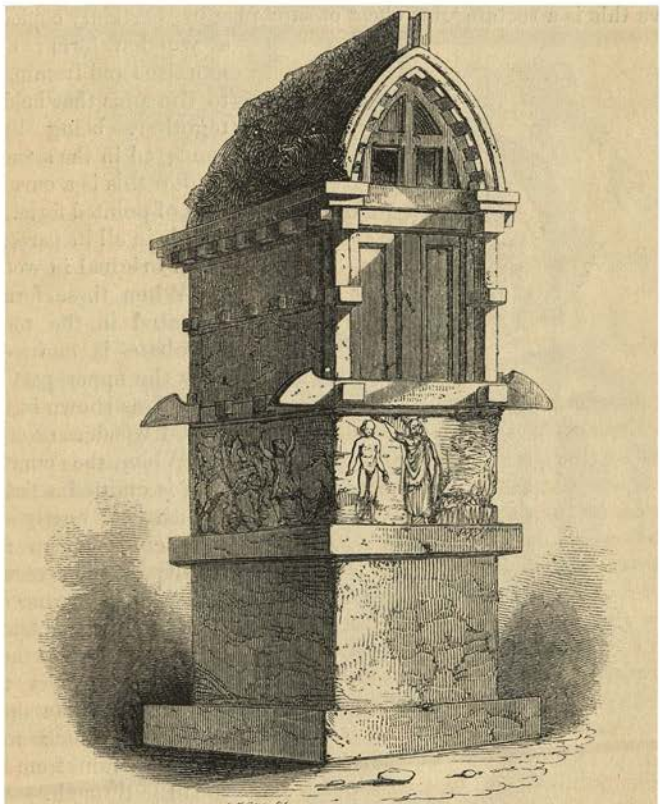
150. Rock-cut Frontispiece at Doganlu. From Texier's Asie Mineure.

them to indicate a funereal purpose, and the inscriptions which accompany them are not on the monuments themselves, nor do they refer to such a purpose. Altogether, they are certainly among the most mysterious remains of antiquity, and, beyond a certain similarity to the rock-cut tombs around Persepolis, it is not easy to point out any monuments that afford even a remote analogy to guide us in our conjectures. They are of a style of art clearly indicating a wooden origin, and consist of a square frontispiece, either carved into certain geometric shapes, or prepared apparently for painting; at each side is a flat pilaster, and above a pediment terminating in two scrolls. Some, apparently the more modern, have pillars of a rude Doric order, and all indeed are much more curious than beautiful. When more of the same class are discovered, they may help us to some historic data: all that we can now say of them is, that, judging from their inscriptions and the traditions in Herodotus, they seem to belong to some Indo-Germanic race from Thessaly, or thereabouts, who have crossed the Hellespont and settled in their neighbourhood; and their date is possibly as far back as 1000, and most probably before 700 B.C.

There are other rock-cut sculptures farther east, at Pterium and elsewhere; but all these are figure sculptures, without architectural form or details, and therefore hardly coming within the limits of this work.

The only remaining important architectural group in Asia Minor

is that of Lycia, made known in this country since the year 1838, by the discoveries of Sir Charles Fellows and others. Interesting though they certainly are, they are extremely disheartening to any one looking for earlier remains in this land,—inasmuch as all of them, and more especially the older ones, indicate distinctly a wooden origin—more strongly perhaps than any architectural remains in the western world. The oldest of them cannot well be carried farther back than the Persian conquest of Cyrus and Harpagus. In other words, it seems perfectly evident that up to that period the Lycians used only wood for their buildings, and that it was only in the time of the Persians that they first learnt to substitute for their frail and perishable structures others of a more durable material.



151. Lycian Tomb. From British Museum.

As already observed, the same process can be traced in Egypt in the earliest ages. In India it continued as late as the 4th or 5th centuries A.D. In Greece—in what was not borrowed from the Egyptians—the change took place about the same time as in Lycia, that is to say in the 6th century B.C. It is important to observe here that, wherever the process can be detected, it is in vain to look

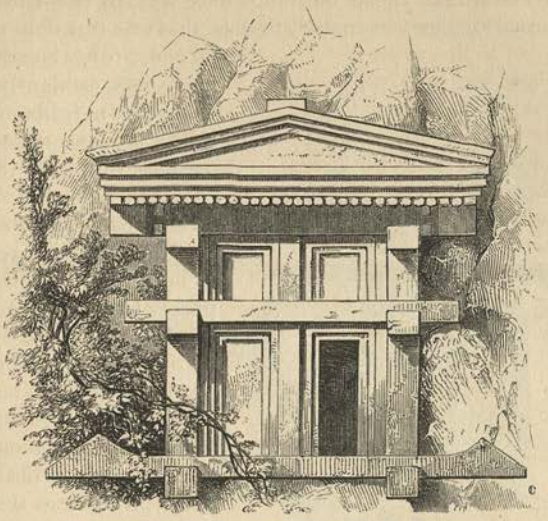
for earlier buildings. It is only in the infancy of stone architecture that men adhere to wooden forms, and as soon as habit gives them familiarity with the new material they abandon the incongruities of the style, and we lose all trace of the original form, which never reappears at an after age.

All the original buildings of Lycia are tombs or monumental erections of some kind, and generally may be classed under two heads, those having curvilinear, and those having rectilinear roofs, of both which classes examples are found structural—or standing alone—and also specimens cut in the rock. The woodcut (No. 151) represents a perfect constructed tomb. It consists first of a double podium, which may have been in all cases, or at least generally, of stone. Above this is a rectangular chest or sarcophagus, certainly copied from a wooden form; all the mortises and framing, even to the pins that held them together, being literally rendered in the stonework. Above this is a curvilinear roof of pointed form, which also is in all its parts a copy of an original in wood.

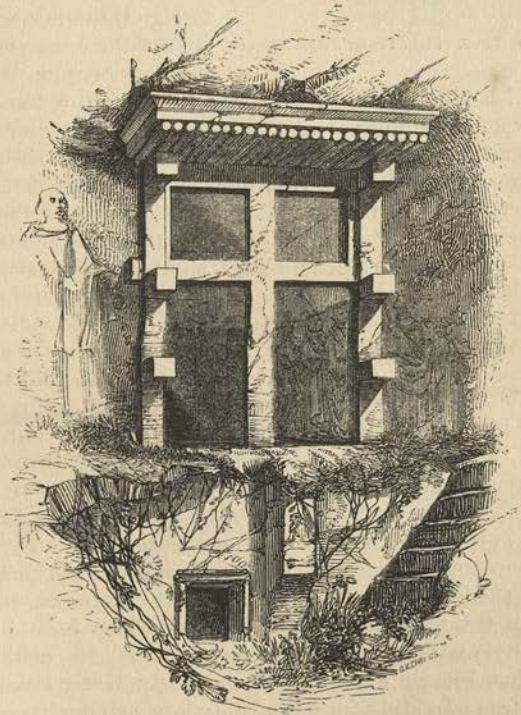
152. Rock-cut Lycian Tomb. From Forbes and Spratt's Lycia.

When these forms are repeated in the rock the stylobate is omitted, and only the upper part represented, as shown in the annexed woodcut (No. 152).

When the curvilinear roof is omitted, a flat one is substituted, nearly similar to those common in the country at the present day, consisting of beams of unsquared timber, laid side by side as close as they can be laid, and over this a mass of concrete or clay, sufficiently thick to prevent the rain from penetrating through. Sometimes this is surmounted by a low pediment, and sometimes the other framing stands out from the rock, so as to give the entrance of the tomb something of a porchlike form. Both these forms are illustrated in the two woodcuts (Nos. 153, 154), and numerous varieties of them are shown in the works of Sir Charles Fellows and others, all containing the same elements, and betraying most distinctly the wooden origin from which they were derived.

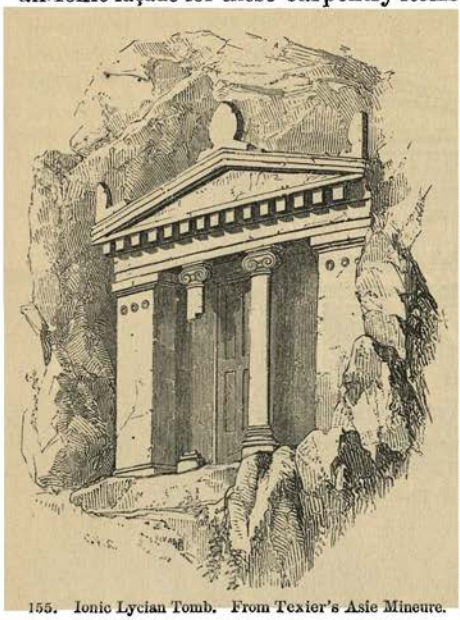


153. Rock-cut Lycian Tomb. From Texier's Asie Mineure.



154. Rock-cut Lycian Tomb. From Sir Charles Fellows's work.

The last form that these buildings took was in the substitution of an Ionic façade for these carpentry forms: this was not done apparently at once, for, though the Ionic form was evidently borrowed from the neighbouring Greek cities, it was only adopted by degrees, and even then betrayed more strongly the wooden forms from which its entablature was derived than is usually found in other or more purely Grecian examples. As soon as it had fairly gained a footing, the wooden style was abandoned, and a masonry one substituted in its stead. The whole change took place in this country probably within a century; but this is not a fair test of the time such a process usually takes, as here it was evidently done under foreign influence, and with the spur of the example of a stone-building people. We have no knowledge of how long it took in Egypt to effect the transformation. In India, where the form and construction of the older Buddhist temples resemble so singularly these examples in Lycia, the process can be traced through five or six centuries; and in Persia it took perhaps nearly as long to convert the wooden architecture of the Assyrians into even the imperfect stone architecture of the Achæmenians. Even in their best and most perfect buildings, however, much still remained to be done before the carpentry types were fairly got rid of, and the style entitled to rank among the masonic arts of the world.



155. Ionic Lycian Tomb. From Texier's Asie Mineure.

The remaining ancient buildings of Asia Minor were all built by the Greeks and Romans, each in their own style, so that their classification and description belong properly to the chapters treating of the architectural history of those nations, from which they cannot properly be separated, although at the same time it is true that the purely European forms of the art are considerably modified by the influence of local Asiatic forms and feelings. The Ionic order, for instance, which arose in the Grecian colonies on the coast, is only the native style of this country Doricized, if the expression may be used. In other words, the local method of building had become so modified and altered by the Greeks in adapting it to the Doric, which had become the typical style with them, as to lose almost all its original Asiatic forms. It thus became essentially a stone architecture with external columns, instead of a style indulging only in wooden pillars, and those used internally, as there is every reason to suppose was the earlier

form of the art. The Ionic style, thus composed of two elements, took the arrangement of the temples from the Doric, and the details from the Asiatic original. The Roman temples, on the contrary, which have been erected in this part of the world, in their columns and other details exactly follow the buildings at Rome itself; while, as in the instances above quoted of Jerusalem, Palmyra, Kangovar, and others, the essential forms and arrangements are all local and Asiatic. The former are Greek temples with Asiatic details, the latter Asiatic temples with many Roman masonic forms. The Greeks in fact were colonists, the Romans only conquerors; and hence the striking difference in the style of Asiatic art executed under their respective influence. We shall have frequent occasion in the sequel to refer to this difference.

BOOK V.

CHAPTER I.

EGYPT.[1]

CONTENTS.

Introductory remarks — Dimensions of the Pyramids — Pyramids of Gizeh — Saccara — Architecture of the Pyramids.

We have now traced the history of all the known styles of architecture of the Eastern World, from their origin to the time when they lost their local individuality in the great reactionary movements that took place from time to time from the West towards the East. It now remains to take up the thread of the Western styles of art at their earliest dawn in Egypt, and to trace them through the history of that great band of nations living round the shores of the Mediterranean Sea, who carried forward the progress of the art, without any interruption of its continuity, from its first appearance on the banks of the Nile till it sunk with the fall of the Roman Empire, to make way for the era of Christian forms and Christian art.

Even, however, in this limited space, perfect continuity of narrative will be impossible. To prevent confusion, and the necessity of recurring to a subject after it has been finished, it will be expedient first to complete the history of Egyptian art from the earliest time till its extinction in the time of the Roman Emperors; then to go back 12 or 13 centuries to commence the early history of Pelasgic art in Greece, and trace the history of the Grecian styles down to the time of Alexander the Great, and a third time to revert to a period nearly as early, or to the commencement of Etruscan art in Italy. Finally it will be necessary to trace the development of art in Rome during the period when that great city gradually absorbed Greece and Egypt in the vast vortex of her ambition, till all these forms of art perished with the

[1] It will be seen that in this chapter the whole subject of Egyptian chronology is omitted. It has been thought necessary to do this on account of the largeness of the subject and of the great difference of opinion which prevails upon it. The actual *difference* between the best authorities for the date (for instance) of the Great Pyramid is no less than 2400 years. It has been thought better, in a work like the present, to exclude the question altogether than to adopt a system which is so far from settled, without the possibility of stating the grounds on which that system rests. The question is examined in an Appendix to the 'Principles of Beauty in Art,' by the Author.

early civilization of the Western World, in the downfall of the Roman Empire after the age of Constantine the Great.

Without attempting here to assign accurate, or even approximate dates, we will endeavour to state what is beyond all dispute, and what must be borne in mind in order to form any correct idea at all of the various classes of remains in this ancient land.

In the accounts which have been transmitted to us by the Egyptians themselves, their early history and chronology are divided according to the dynasties of their kings, of which they enumerate no less than 29. Most of these are obscure and unimportant. The great epochs were the 4th dynasty, which reigned at Memphis, to which the pyramids of Gizeh are assigned; the 12th, of which Osortasen was the great monarch and Thebes the capital; and the 18th and 19th, which followed on the expulsion of the intruders known as the Shepherd Kings. The early part of the 18th dynasty was rendered illustrious by the exploits of several kings bearing the name of Thothmes. After their period a second interruption took place under foreign kings who were worshippers of the sun, probably a remnant of the Shepherd Kings. On their expulsion the original line was restored, and during the reigns of Manepthah and the two first kings named Rhamses or Remeses attained the highest pitch of splendour.

The first king of the 19th dynasty, known locally as the third Rhamses, is clearly identified with the great conqueror known by the Greeks as Sesostris. This and the previous dynasty are those which furnish us with the most magnificent architectural remains; and from the conclusion of this brilliant epoch began the decline of Egyptian art and dominion.

The architectural history of Egypt thus divides itself into two great periods. The first is represented by the Pyramids, all the principal of which stand in the neighbourhood of Memphis, the royal city of the old kingdom of Lower Egypt. The second period is represented by the temples erected by the kings of the later dynasties, who reigned at Thebes in Upper Egypt. All chronological systems, however widely differing in the actual dates assigned, concur in placing the pyramids of Egypt as the oldest of all architectural objects, either in existence or of which any record or description whatever is preserved. Their relative age, as well as that of the other monuments, is known beyond a doubt. Previous to the rise of the 12th or 1st great Theban dynasty we have a series of nearly 50 royal pyramids or tombs, with contemporary sepulchres and smaller monuments in their neighbourhood, which enable us to understand, and very completely to illustrate, the whole progress of the art of this earlier kingdom. This being the case, it really is not necessary to attempt to ascertain the exact period which elapsed between their erection and that of the monuments which succeeded them. It is sufficient to know that they form the oldest group of monuments in Egypt, and, so far as we can ascertain, also the oldest in the world. We have every reason to look upon them as examples of a style absolutely independent of all previous efforts of human art either in Egypt itself or in any contemporary nation.

With these evidences of extreme antiquity we are startled to find Egyptian art nearly as perfect in the oldest pyramids as in any of the later, or as it became afterwards, when all the refinement and all the science of the Greeks had been applied to its elaboration. Even at the earliest period the Egyptians had attained the art of transporting the heaviest blocks of granite from Syene to Memphis, of squaring them with a mathematical precision never surpassed, of polishing them to a surface as smooth as glass, and of raising them higher than such blocks have ever been raised in any buildings in the world, and setting them with a truth and precision so wonderful, that they now lie there without flaw or settlement, after thousands of years have passed over them, and swept the more modern buildings of other nations from the face of the earth, or laid them in undefinable and indiscriminate ruin.

At that early period, too, the art of sculpture was as perfect as it ever afterwards became: the hieroglyphics are as perfectly cut, as beautifully coloured, and told their tale with the same quaint distinctness which afterwards characterised them. It is in vain to speculate on how long it must have taken any nation to reach this degree of perfection, more especially a nation so little progressive as the Egyptians were. We must content ourselves with the fact, and in our wonder at its immensity learn from it more humble notions of our own antiquity and knowledge, and more extended views of ancient history. Above all, we acquire a more exalted admiration for the people who, long before the dawn of civilisation among other nations, had already reached so high a pitch of greatness, and achieved that position which enabled them to influence and instruct all subsequent ages in their science and their philosophy.

Turning, then, to the Pyramids—the oldest, largest, and most mysterious of all the monuments of man's art now existing—we find that all those in Egypt are situated on the left bank of the Nile, just beyond the cultivated ground, and on the edge of the desert, and all the principal ones within what may fairly be called the Necropolis of Memphis. Lepsius, it is said, has discovered and explored about 50 of these, all which appear to be royal sepulchres. This alone, if true, would suffice to justify us in assigning a duration of 1000 years to the dynasties of the pyramid-builders, which is about the date we acquire from other sources.

The three great pyramids of Gizeh are the most remarkable and the best known of all those of Egypt. Of these the first, erected by Cheops, or, as he is now more correctly named, Suphis, is the largest; but the next, by Chepheren, his brother, is scarcely inferior in dimensions; the third, that of Mycerinus, is very much smaller, but excelled the two others in this, that it had a coating of beautiful red granite from Syene, while the other two were revêted only with the beautiful limestone of the country. Part of this coating still remains near the top of the second; and Colonel Vyse was fortunate enough to discover some of the coping-stones of the Great Pyramid buried in the rubbish at its base, sufficient to indicate the nature and extent of the whole, and to

show that it was commenced from the bottom and carried upwards, not at the top, as it has sometimes been thoughtlessly asserted.

The dimensions of these three, as ascertained by the copings, are as follows :—

	Length of base.	Height.	Area in square feet.	Angle of side.	Angle of passage.
	Feet.	Feet.		° ′	° ′
Cheops . . .	764 . .	480 . .	543,696 . .	51·50 . .	26·41
Chepheren . .	707 . .	454 . .	499,849 . .	52·20 . .	25·55
Mycerinus . .	354 . .	218 . .	125,316 . .	51· . .	26·2 [1]

From this it will be seen that the area of the Great Pyramid (more than 13 acres) is more than twice the extent of that of St. Peter's of Rome, or any other building in the world. Its height is equal to the highest spire of any cathedral in Europe; for, though it has been attempted to erect higher buildings, in no instance has this yet been successful. Even the third pyramid covers more ground than any Gothic cathedral, and the mass of materials it contains far surpasses that of any erection we possess in Europe.

All the pyramids (with one exception) face exactly north, and have their entrance on that side—a circumstance the more remarkable, as the later builders of Thebes seem to have had no notion of orientation, but to have placed their buildings and tombs, almost as if to avoid regularity, in every conceivable direction. Instead of the entrances to the pyramids being level, they all slope downwards—generally at angles of about 26° to the horizon—a circumstance which has led to an infinity of speculation, as to whether they were not observatories, and meant for the observation of the pole-star, &c. All these theories, however, have failed, for a variety of reasons it is needless now to recapitulate; but among others it may be mentioned that the angles are not the same in any two pyramids, though built within a few years of one another, and in the twenty which were measured by Colonel Vyse they vary from 22° 35′ to 34° 5′. The angle of the inclination of the side of the pyramid to the horizon is more constant, varying only from 51° 10′ to 52° 32′, and in the Gizeh pyramids the angle of the passage seems to have been intended to have been about one-half of this. Beyond this it is difficult to proceed, unless we may perhaps obtain an approximation to the principle by which the builders seem to have been governed by the following simple calculation. Divide the circle into 28 parts, which, as the Egyptians used weeks and lunar reckoning, is by no means an improbable division. Let every 28th part be represented by a, which will thus be equal to 12°.857. Multiply this by 2, 3, 4, and 5, and we obtain thereby very nearly the

[1] The measures quoted in the text are all taken from the elaborate surveys made by Mr. Perring for Colonel Vyse, which are by far the most complete and correct which have yet been published. It is necessary, however, to warn the reader that Mr. Perring published two sets of measurements, those from actual observation, which are those followed in the text, and another set corrected according to his theory of what they ought to have been, supposing every part to have been set out of an even number of Egyptian cubits. In most instances his theory agrees pretty closely with his observations, but is generally more likely to mislead than guide the reader.

mean angle of all the different parts of the pyramid.[1] But as no two pyramids follow the same rule, it is obvious that this or any other explanation must fail, if strictly applied to any one, to be equally applicable to the others.

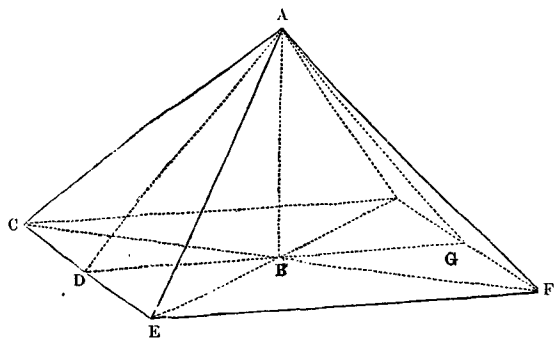
The most plausible theory seems to be, that the faces of the pyramid were intended to be practically 4 equilateral triangles, laid against one another, and meeting at the apex. For instance, in the three great pyramids at Gizeh, the ratios of the sloping edges to the base are as follows :—

	Base.	Length of sloping edge.	Difference.
Great Pyramid	764 feet.	720 feet.	44 feet.
Second Pyramid	707 ,,	672 ,,	35 ,,
Third Pyramid	354 ,,	330 ,,	24 ,,

It will be observed that the difference is least—about 5 per cent.—in the second pyramid, the one which retains the greatest part of its coping; and there may be some error in the measurement of the others derived from a single coping-stone.

With any other people than the Egyptians this might be considered a sufficient explanation—all the other parts being multiples or sub-multiples of the angles derived from this fact. But the Egyptians were such excellent mathematicians and such perfect builders in those times, that this can only be considered as an approximation towards the solution of the problem; but it is one sufficient for our empirical rule to attain the general form and dimension of a pyramid, using the multiples given in the preceding page.

The principal dimensions of the Great Pyramid have been given, to which it may be added that the entrance is about 47 ft. 6 in. above the base, on the 15th step or platform. There are in all 203 such



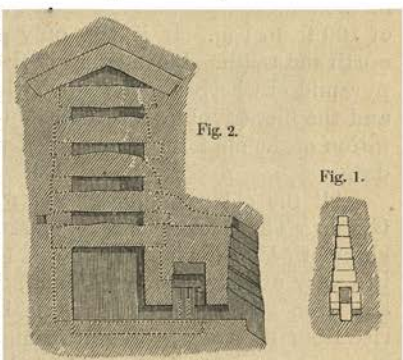
156.

[1]	Great Pyramid.	Second Pyramid.	Third Pyramid.	Angles calculated from the 28th of a circle (a).
Angle ADB . . .	51° 20′	52° 21′	51° 10′	$4a = 51{\cdot}428$
,, DAG . .	77 19	75 4	77 38	$6a = 77{\cdot}142$
,, ACB . .	41 28	42 30	41 18	$3a = 38{\cdot}571$
,, CAF . .	97 3	94 59	97 23	$7\frac{1}{2}a = 96{\cdot}428$
,, AEF . .	58 0	58 24	58 6	$4\frac{1}{2} = 57{\cdot}856$
,, EAF . .	63 59	62 50	63 46	$5a = 64{\cdot}285$
Passages	26 33 (?)	25 55	27 34	$2a = 25{\cdot}714$

steps. Their average height is nearly 2 ft. 6 in., but they diminish in height—generally speaking, but not uniformly—towards the top. The summit now consists of a platform 32 ft. 8 in. square; so that about 24 ft. is wanting, the present actual height being 456 ft. It contains 2 chambers above-ground, and 1 cut in the rock at a considerable depth below the foundations.

The passages and chambers are worthy of the mass; all are lined with polished granite; and the ingenuity and pains that have been taken to render them solid and secure, and to prevent their being crushed by the superincumbent mass, raise our idea of Egyptian science higher than even the bulk of the building itself could do.

Towards the exterior, where the pressure is not great, the roof is flat, though it is probable that even there the weight is throughout discharged by 2 stones, sloping up at a certain angle to where they meet, as at the entrance. Towards the centre of the pyramid, however, the passage becomes 28 ft. high, and assumes the form of inverted stairs, as shown in the section (fig. 1), till it contracts so much at the top that no pressure can hurt it. Nowhere, however, is this ingenuity more shown than in the royal chamber, which measures 17 ft. 1 in. by 34 ft. 3 in., and 19 ft. in height. The walls are lined and the roof is formed of splendid slabs of Syenite, but above the roof 4 successive chambers, as shown in the annexed section (fig. 2), have been formed, each divided from the other by slabs of granite, polished on their lower surfaces, but left rough on the upper, and above these a 5th chamber is formed of 2 sloping blocks to discharge the weight of the whole. The first of these chambers has long been known; the upper four were discovered and first entered by Colonel Vyse, and it was there that he discovered the name of the founder. This was not engraved as a record, but scribbled in red paint on the stones, apparently as a quarry-mark, or as an address to the king, and accompanied by something like directions for their position in the building, sufficient, however, to identify completely the founder and the time of the erection of the pyramid. This is the only really virgin discovery in the pyramids, as they have all been opened either in the time of the Greeks or Romans, or by the Mahometans, and an unrifled tomb of this age is still a desideratum. Until such is hit upon we must remain in ignorance of the real mode of sepulture in those days, and of the purpose of many of the arrangements of these mysterious buildings.



157. Section of King's Chamber and of Passage in Great Pyramid. Scale 50 ft. to 1 in.

The portcullises which invariably close the entrances of the sepulchral chamber in the pyramids are among the most curious and inge-

nious of the arrangements of these buildings. Generally they consist of great cubical masses of granite, measuring 8 or 10 ft. each way, and consequently weighing 50 or 60 tons, and even more. These were fitted into chambers prepared during the construction of the building, but raised into the upper parts, and, being lowered after the body was deposited, closed the entrance so effectually that in some instances it has been found necessary either to break them in pieces, or to cut a passage round them to gain admission to the chambers. They generally slide in grooves in the wall, to which they fit exactly, and altogether show a degree of ingenuity and forethought very remarkable, considering the early age at which they were executed.

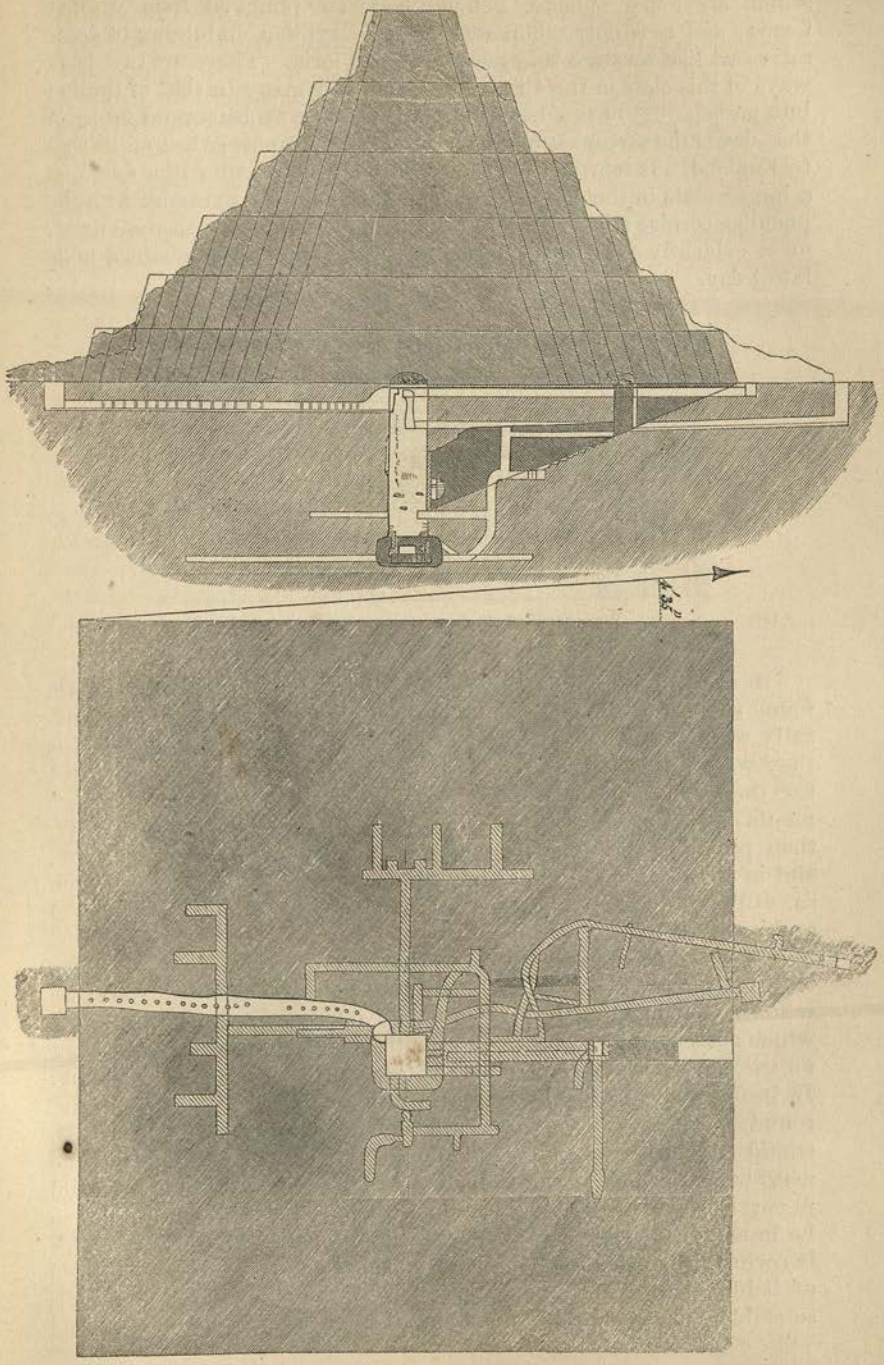
In the second pyramid one chamber has been discovered partly above ground, partly cut in the rock. In the third the chambers are numerous, all excavated in the rock; and from the tunnels that have been driven by explorers through the superstructures of these two, it is very doubtful whether anything is to be found above ground. It is observable that the measurements of the third pyramid are as nearly as possible the exact half of those of the second. This cannot have been unintentional.

The exceptional pyramid above alluded to is that of Saccara, shown in the annexed plan and section (woodcut No. 153), both to the scale of 100 ft. to 1 in. It is the only pyramid that does not face exactly north and south. It is nearly of the same general dimensions with the pyramid of Chepheren, but its outline, the disposition of its chambers, and the hieroglyphics found in its interior, all seem to point to an imitation of the old form of mausolea by some king of a far more modern date.

All the old pyramids do not follow the simple outline of those of Gizeh. That at Dashoor, for instance, rises to half its height with a slope of 54° to the horizon, but is finished at the angle of 45°, giving it a very exceptional appearance; and that of Meydoon has more the appearance of a tower, its angle being 74° 10′. Two smaller towers rise from its summit, in the manner in which it is supposed Assyrian pyramids were usually constructed. The latter, indeed, seems not to have been an unusual mode of building pyramids in stories or stages, each less than the other, but it is possible that this was only temporary or preparatory, and that it was intended eventually to smooth the whole down to the more orthodox form of a straight-sided pyramid.

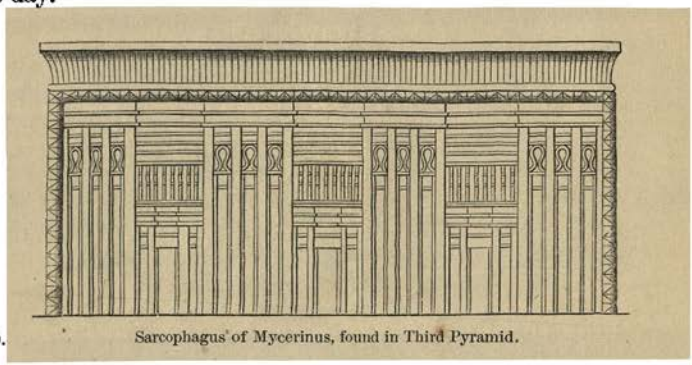
The architecture of the age of the pyramids has not yet been sufficiently illustrated; but when the great Prussian work is finished, this reproach will be removed, as Lepsius seems to have paid especial attention to the structural tombs and buildings around the pyramids, many or most of which are contemporary, or nearly so, with the oldest of them.

Like all early architecture, it shows evident symptoms of having been borrowed from a wooden original. The lintels of the doorways are still rounded, and the walls are mere square posts, grooved and jointed together, and every part of it as unlike a stone architecture as can possibly be seen. Yet the pyramids themselves, and those tombs



158. Pyramid of Saccara.
From Colonel Vyse's work.
Scale 100 ft. to 1 in.

which are found outside, generally are far removed from wooden forms; and it is only when we find the Egyptian indulging in decorative art that we trace this more primitive form. There are two doorways of this class in the British Museum, and many in that of Berlin; but perhaps one of the best illustrations of the architectural forms of that day is the sarcophagus of Mycerinus, unfortunately lost on its way to England. It represents a palace, with all the peculiarities found on a larger scale in the buildings which surround the pyramid, with the peculiar cornice and still more peculiar roll or ligature on the angles, most evidently a carpentry form, but which the style retained to its latest day.



159. Sarcophagus of Mycerinus, found in Third Pyramid.

In many of the tombs surrounding the pyramids square piers are found supporting the roof, sometimes, but rarely, with an abacus, generally without any carved work, though it is more than probable that they were originally painted with devices upon which they depended for their ornament. In most instances they look more like fragments of a wall, of which the intervening spaces had been cut away, than pillars in the sense in which we usually understand the word; and in all instances in the early ages they must be considered more as utilitarian expedients than as parts of an ornamental style of architecture.

From the knowledge, however, that we do possess of this style, we may safely assert that it is one of the least beautiful artistically of those we are acquainted with, and infinitely inferior to the Theban style which succeeded it. The early Egyptians built neither for beauty nor for use, but for eternity. To this last they sacrificed every other feeling. In itself nothing can be less artistic than a pyramid. A tower, either round or square, or of any other form, and of the same dimensions, would have been far more imposing, and if of sufficient height—the mass being the same—might almost attain to sublimity; but a pyramid never looks so large as it is, and not till you almost touch it can you be brought to believe that its dimensions are so great as they are. This is owing principally to all its parts sloping away from the eye instead of boldly challenging observation; but, on the other hand, no form is so stable, none so capable of resisting the injuries of time or force, and

none, consequently, so well calculated to attain the object for which the pyramids were erected. As examples of technic art, they are unrivalled among the works of men, but they rank among the lowest if judged by the æsthetic rules of architectural art.

The same character belongs to the tombs and buildings around them: they are low and solid, and possess neither beauty of form nor any architectural feature at all worthy of attention or admiration, but they have lasted nearly uninjured from the remotest antiquity, and thus have attained the object their builders had principally in view when they designed them.

CHAPTER II.

THEBAN MONARCHY.

CONTENTS.

Historical notice — Pillars — Temple-Palaces — Rhamession — Karnac.

The moment we pass the local limits of the necropolis of Memphis, or chronologically come below the dynasties of the pyramid-builders, we are at once aware of being in the presence of a new style of architecture, differing in almost every respect from that which preceded it, and in many characteristics antagonistic to it to a remarkable extent.

We have no longer any pyramids, nor any traces of that quaint style of wooden architecture pointed out above. Obelisks become one of the most remarkable and striking features of the new style, all of them, so far as we know, situated on the eastern side, as all the pyramids were on the western side of the Nile. Columnar architecture becomes also general, comprising two of the forms of columns, afterwards more generally used; the Proto-Doric, so called from its extreme similarity to the Greek order of that name, and those with what is called the lotus-bud capital, from its supposed resemblance to the bud of that sacred plant. It is in this age that the great temple at Karnac was commenced by Osortasen, the first temple of which we have any cognizance in Egyptian history; and under another king of the same dynasty—Amenemha—the Labyrinth was also begun, though when it was finished, or how far it was carried by him, are as yet by no means clear. Nor is it known whether the pyramid that forms part of the group was built by that king, or belongs to some prior dynasty.

Under the kings of this period Egypt enjoyed great prosperity; the face of the country was changed; a new style of art and new manners were introduced. This state of things was suddenly checked by the Shepherd invasion, the greatest of all the afflictions which Egypt suffered during her long career, which humbled her into the condition of a subject province. It is by no means satisfactorily settled, even now, who these Shepherds were, though they must probably have been a race inhabiting either the Valley of the Euphrates, or some of the countries between that region and the Valley of the Nile, who, entering by the Isthmus of Suez, took possession of the whole country from the Cataract to the sea. The detestation in which the memory of these intruders was ever after held in Egypt testifies to the oppressiveness of their rule, and to the disgust which their barbarism inspired among their far more civilised subjects. We read that, during the steward-

ship of Joseph "the Egyptians might not eat bread with the Hebrews; for that is an abomination to the Egyptians," and that "every shepherd is an abomination unto the Egyptians."[1]

The descendants of the old Egyptian kings, however, still existed, though they cannot be said to have reigned till lapse of time brought decay and corruption into the ranks of the Shepherd kings, when, joining with the other petty princes of native descent, they rose, expelled the Shepherd races, and restored the Theban Empire with even greater glory than before. Under their rule Egypt became the most powerful state in the ancient world, and attained a point of greatness in arms and art which she never surpassed, and which, in so far as architecture is concerned, is unequalled by any state which has existed from that time to this.

On the restoration of the old Egyptian monarchs they brought back with them the style of art which had prevailed before the interruption caused by their subjection, unaltered in all respects. The two periods, therefore, must be taken together as one group. As this group comprehends all that is best and greatest in Egyptian art, it will be necessary to treat it rather more in detail and more methodically than the previous style.

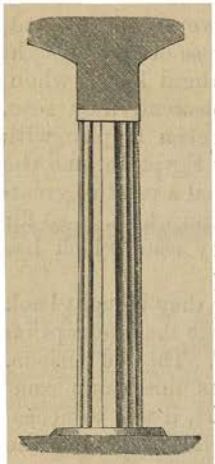
PILLARS.

Egyptian pillars are of very various forms. Of these we must be content here to describe a few, which appear the most distinct, and typical of the general style of art.

The simplest form is that of a plain square pier, with or without an abacus, as used in the tombs about the pyramids. Sir Gardner Wilkinson suggests that it was derived from the supports left in quarries to sustain the superincumbent strata, but its origin may be even earlier and simpler than this, for it is evident that, wherever a roof or verandah or open space is to be covered, whether the masonry is of brick or of stone, a square pier is the most obvious, the simplest, and mechanically the best mode of supporting a beam or beams. Such square piers were probably used in the bazaars, the houses, and temples of Memphis, before even the time when the pyramids were erected. When built of brick or a rubble stone, an abacus, either of flat tiles or of wood, becomes indispensable, to diffuse the pressure of the beams equally. Piers of masonry in regular flat courses were used contemporaneously with those of brick or rubble. In none of these is it necessary that the abacus should project beyond the line of the pillars, nor in fact does this appear to have been usual in any period of Egyptian art. The next form that this pillar took was that of an octagon, produced by cutting off the angles of the square: an improvement which, if not indispensable for pillars on the exterior of buildings, was nearly so internally, where the space occupied and the sharp square angles were particularly awkward. This step made, it was easy to carry it further by cutting off the angles of the octagon, so as to make

[1] Genesis xliii. 32; xlvi. 34.

it a pillar of 16 sides, and again of 32, as was done afterwards in India, but with this difference, that in that country all these polygons are found in the same pillar, while here the same one is always carried from the base to the summit. All these variations required a marked and projecting abacus, to correspond with the lines of the beams or entablature that rested upon them, which was not indispensably necessary when merely a square pier was employed.



160. Pillar at Beni Hassan.

The last improvement, and that which brought it nearest the Grecian form, was hollowing out the faces of the polygon with a reversed curve, so as to produce what is called fluting. All these kinds of pillars are found perfected in very early tombs, and may have been used from the most remote antiquity. The earliest examples exhibiting all these improvements that have come down to our age are those at Beni Hassan, excavated during the supremacy of the 12th dynasty. There both 8 and 16 sided pillars are found supporting what may have been either a stone or wooden architrave, and sometimes, as in this view (woodcut No. 161), what certainly represents a wooden roof. Internally, as shown in woodcut No. 160, it looks very much as if a brick arch were thrown from range to range of these columns, but, being cut in the rock, it is difficult to be certain on this point.

These proto-Doric pillars occur in the rock-cut temples of Nubia, of the age of Rhamses II., and elsewhere, sometimes with a flat band down the centre, containing an inscription in hieroglyphics; generally they have all the characteristics of the Grecian order, except the echinus or beautiful carved member under the abacus, which the Egyptians never used.

161. Tomb at Beni Hassan.

One of the oldest forms of pillars in Egypt is represented in woodcut No. 162. It is evidently derived from a wooden post used to support a roof internally, and its peculiar shape may be meant, either as a reproduction in carving of what were originally stripes of colour, or as stems of lotus, or of some kind of reeds, coupled and banded together. Its capital is not unlike the shape of a bud. It is found with the proto-Doric at Beni Hassan, and it continued the favourite order throughout the whole Pharaonic period, though frequently a plain circular shaft was substituted for the complex one.

At Beni Hassan the shaft tapers regularly from the base to the

necking of the capital, but in the great examples executed during the 18th dynasty the pillars contract again at the base, as in the next woodcut, which gives a degree of lightness and elegance to their otherwise too massive forms that is singularly pleasing.

162. Pillar from Beni Hassan.

The best example of the order is found in the lateral colonnades of the great hall at Karnac (woodcut No. 170 farther on), but there are scarcely any of the temples of the great age that have not specimens of it. At first sight its form is so peculiar, and so unmeaning, that it has never been copied out of Egypt, though all her other orders are found elsewhere.

A large class of pillars have capitals resembling the calyx or bell of a flower, but the form is so conventional, and, as no examples of the order are found of a date anterior to the great 18th dynasty, we find it only so far removed from its origin, that it is difficult to trace it backward to its source.

The typical example of this style is found in the Hypostyle Hall at Karnac, where the pillars are 70 ft. in height to the under side of the architrave, and more than half that in circumference at a little above the base.

Those, however, of the Rhamession (woodcut No. 163), on the other side of the Nile, though only 30 ft. in height, are perhaps more graceful, though certainly neither so majestic nor so characteristic of Egyptian art.

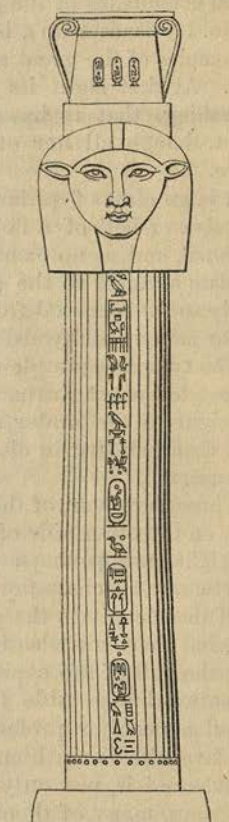
Of these capitals the papyrus cup may be considered as the typical form, but there are also in Egypt some decidedly lotus forms. Sometimes the bell of the capital is adorned with palm-leaves, or reeds, or conventional vegetable forms. In the Ptolemaic period the Greeks showed a peculiar preference for this order, from its resemblance to their favourite Corinthian order, which in fact was copied from it, and they adorned it, not only as the Egyptians had done, but in fifty fantastic ways, many of them far from being conducive to its appropriateness or architectural beauty.

Another class of pillars is, as far as taste is concerned, the most questionable of any. Its peculiarity consists in employing Isis heads or figures of Typhon, or other deities, as the ornaments of its capitals.

The origin of these is easily explained; for early examples exist showing the Isis head, either painted or sculptured in low relief, on the face or faces of square piers, and gradually the relief and prominence of the head became greater and greater, and the column more and more attenuated, till we come to the typical specimen of Dendera (woodcut No. 165), of the Roman age. It cannot, however, be regarded as an example of the bad taste of modern times, as an Isis-headed capital, represented in the woodcut No. 164, is found

at Sedinga in Ethiopia, of the age of Amunopth III., of the 18th dynasty.

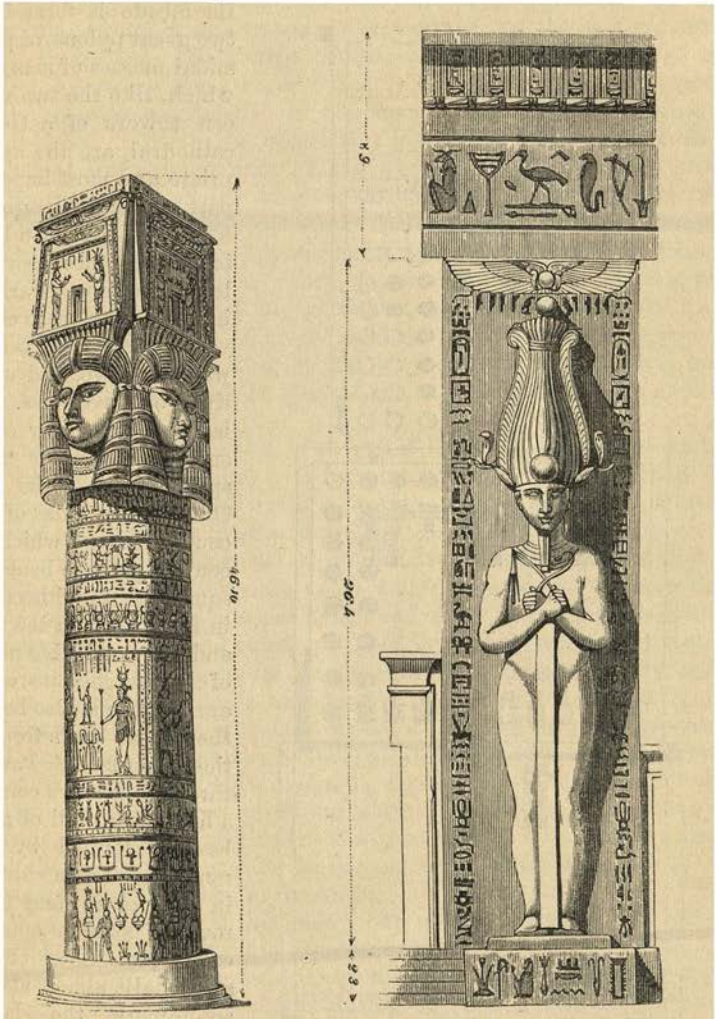
163. Pillar, from Rhamession, Thebes.



164. Pillar, from Sedinga.

This order must not be confounded with what are sometimes, though improperly, called Caryatide columns. In Egypt there are many square piers of the class described above, with Colossi placed in front of them, one of which is shown in woodcut No. 166, but the figures neither support the architrave, as in Greece, nor do they serve to strengthen the pillar, though attached to it. They are in fact statues ranged architecturally, not architectural objects at all. No doubt they heighten the architectural effect, and constitute some of the most imposing groups of Egyptian art: still they are as distinct from the architecture as the adjacent Sphinxes or seated Colossi with which they unite to produce that grandeur of effect the Egyptians knew so well

how to create, by combining the arts of the builder, the sculptor, and the painter, each in his separate province, but still each working out the elaboration of one grand design.



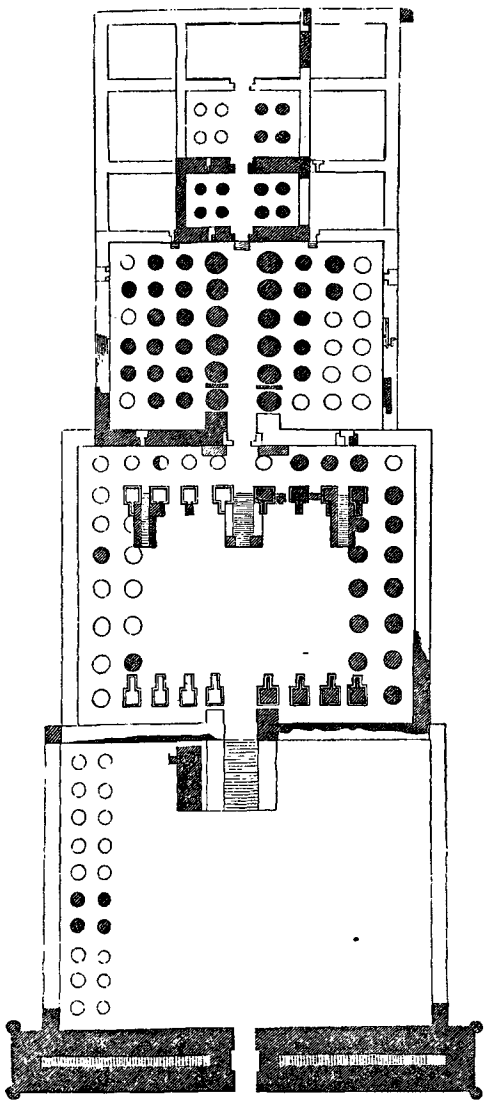
165. Pillar, from the Portico at Dendera.

166. Caryatide Pillar, from the Great Court at Medinet-Habou.

PLANS.

The plans of Egyptian temples are as various as the forms of their pillars; so much so, indeed, as to make it very difficult to describe them. The greatest and noblest is that at Karnac, but, like most Indian temples, it is an aggregation of parts around a small but sacred centre; and having been gradually elaborated during several centuries, it presents no uniformity of plan or design. The temple known as the

Rhamession, on the opposite side of the Nile, is better therefore for our purpose. The whole of it was built by Rhamses the Great, in the 15th century B.C., as will be seen from the plan, drawn to the usual scale.



167. Rhamession at Thebes. Scale 100 ft. to 1 in.

Its façade is formed by two great pylons, or pyramidal masses of masonry, which, like the two western towers of a Gothic cathedral, are the appropriate and most imposing part of the structure externally. Between these is the entrance doorway, leading almost invariably into a great square courtyard, with porticoes always on two, and sometimes on three sides. This leads to an inner court, smaller, but far more splendid, than the first. On the two sides of this court, through which the central passage leads, are square piers with colossi in front, and on the right and left are double ranges of circular columns, which are continued also behind the square piers fronting the entrance. Passing through this, we come to a hypostyle hall of great beauty, formed by two ranges of larger columns in the centre, and three rows of smaller ones on each side. These hypostyle halls almost always accompany the larger Egyptian temples of the great age. They derive their name from having an upper range of columns, or what in Gothic architecture would be called a *clerestory*, through which the light is admitted to the central portion of the hall. Although some are more extensive than this, the arrangement of all is nearly similar. They possess 2 ranges of columns in the centre so tall as to equal the height of

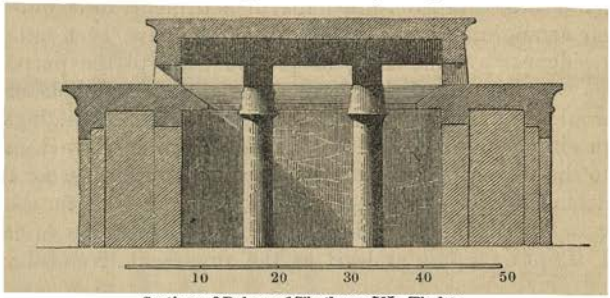
the side columns together with that of the attic which is placed on them. These are generally of different orders; the central pillars having a bell-shaped capital, the under side of which is perfectly illuminated from the mode in which the light was introduced: while in the side pillars the capital was narrower at the top than at the bottom, apparently for the sake of allowing its ornaments to be seen. One of the central pillars is given (woodcut No. 163). Beyond this are always several smaller apartments, in this instance supposed to be nine in number, but they are so ruined that it is difficult to be quite certain what their arrangement was. These seem to have been rather suited to the residences of the king or priests than to the purposes of a temple, as we understand the word. Indeed, palace-temple, or temple-palace, would be a more appropriate term for these buildings than to call them simply temples. They do not seem to have been appropriated to the worship of any particular god, but rather for the great ceremonials of royalty—of kingly sacrifice to the gods for the people, and of worship of the king by the people. He seems to have been regarded, if not as a god, at least as the representative of the gods on earth.

Though the Rhamession is so grand from its dimensions, and so beautiful from its design, it is far surpassed in every respect by the palace-temple at Karnac, which is perhaps the noblest effort of architectural magnificence ever produced by the hand of man.

Its principal dimensions are 1200 ft. in length, by about 360 in width, and it covers therefore about 430,000 square ft., or more than twice the area of St. Peter's at Rome, and more than four times that of any mediæval cathedral existing. This, however, is not a fair way of estimating its dimensions, for our churches are buildings entirely under one roof; but at Karnac a considerable portion was uncovered by any buildings, so that no such comparison is just. The great hypostyle hall, however, is internally 340 ft. by 170, and, with its two pylons, it covers more than 88,000 square ft., a greater area than the cathedral of Cologne, the largest of all our northern cathedrals; and when we consider that this is only a part of a great whole, we may fairly assert that the whole is among the largest, as it undoubtedly is one of the most beautiful buildings in the world.

The original part of this great group was, as before mentioned, the sanctuary or temple built by Osortasen, the great monarch of the 12th dynasty, before the Shepherd invasion. It is the only thing that seems to have been allowed to stand during the five centuries of Shepherd domination, though it is by no means clear that even it stood, and that it had not been pulled down by the Shepherds, and reinstated by the first kings of the 18th dynasty, an operation which was easily performed with the beautiful polished granite masonry of the sanctuary. Be this as it may, Amenophis, the first king of the restored race, enclosed this in a temple about 120 ft. square. Thothmes I. built in front of it a splendid hall, surrounded by colossi, backed by piers; and Thothmes III. erected behind it a palace or temple, which is one of the most singular buildings in Egypt. The hall is 140 ft. long by

55 in width internally, and the roof supported by two rows of massive square columns, and two of circular pillars of most exceptional form, the capital being reversed, and something of the form usually found in Assyria, but never again in Egypt. Like almost all Egyptian halls, it was lighted from the roof in the manner shown in the section. With all these additions, the temple was a complete whole, 540 ft. in length by 280 in width, at the time when the sun-worshippers broke in upon the regular succession of the great 18th dynasty.



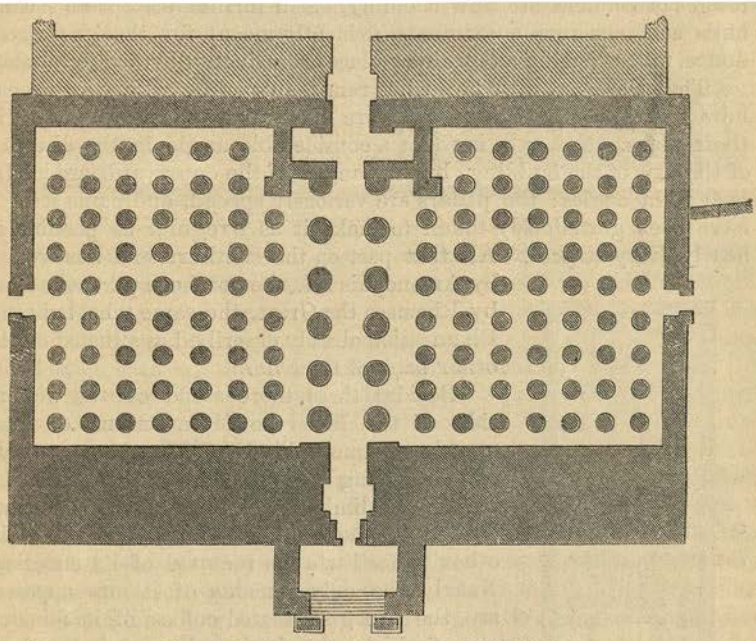
168. Section of Palace of Thothmes III., Thebes.

When the original line was resumed, Manepthah commenced the building of the great hall, which he nearly completed. Rhamses, the first king of the 19th dynasty, built the small temple in front; and the so-called Bubastite kings of the 22nd dynasty added the great court in front, completing the building to the extent we now find it. We have thus, as in some of our mediæval cathedrals, in this one temple, a complete history of the style during the whole of its most flourishing period; and, either for interest or for beauty, it forms such a series as no other country, and no other age, can produce. Besides those buildings mentioned above, there are other temples to the north, to the east, and more especially to the south, and pylons connecting these, and avenues of sphinxes extending for miles, and enclosing walls, and tanks, and embankments, making up such a group as no city ever possessed before or since. St. Peter's, with its colonnades, and the Vatican, make up an immense mass, but as insignificant in extent as in style when compared with this glory of ancient Thebes and its surrounding temples.

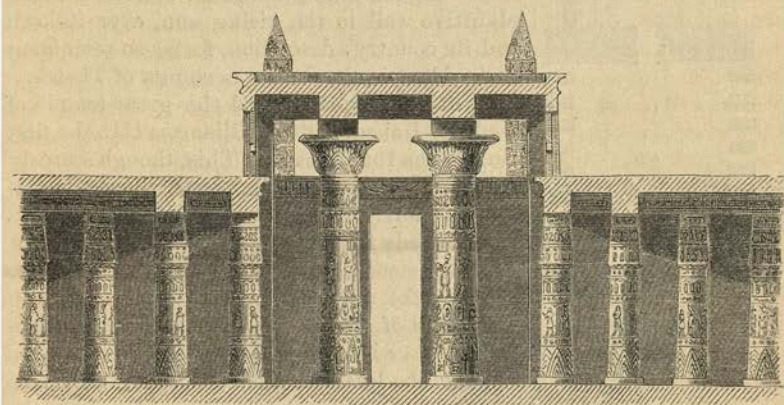
The culminating point and climax of all this group of building is the hypostyle hall of Manepthah. The accompanying plan, and section of its central portion, both to the usual scale, will explain its general arrangement; but no language can convey an idea of its beauty, and no artist has yet been able to reproduce its form so as to convey to those who have not seen it an idea of its grandeur. The mass of its central piers, illumined by a flood of light from the clerestory, and the smaller pillars of the wings gradually fading into obscurity, are so arranged and lighted as to convey an idea of infinite space; at the same time, the beauty and massiveness of the forms, and the brilliancy of their coloured decorations, all combine to stamp this as the greatest of man's architectural works; but such a one as it would be impossible

to reproduce, except in such a climate and in that individual style in which, and for which, it was created.

On the same side of the Nile, and connected with it by an avenue of sphinxes, stands the temple of Luxor, hardly inferior in some respects



169. Plan of Hypostyle Hall at Karnac. Scale 100 ft. to 1 in.

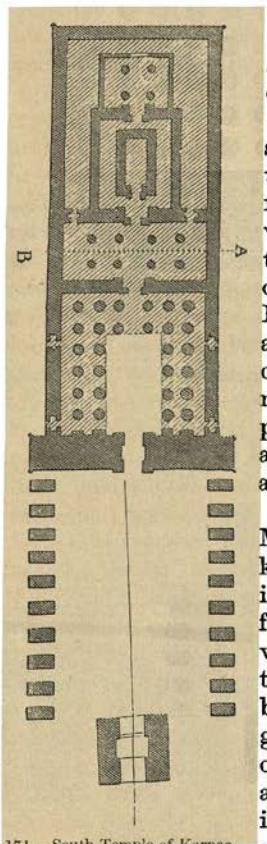


170. Section of central portion of Hypostyle Hall at Karnac. Scale 50 ft. to 1 in.

to its great rival at Karnac; but either it was never finished, or, owing to its proximity to the Nile, it has been ruined, and the materials carried away. The length is about 800 ft., its breadth ranging from 100 to 200 ft. Its general arrangement comprised, first, a great court

at a different angle from the rest, being turned so as to face Karnac. In front of this stand two colossi of Rhamses the Great, its founder, and two obelisks were once also there, one of which is now in Paris. Behind this was once a great hypostyle hall, but only the two central ranges of columns are now standing. Still further back were smaller halls and numerous apartments, evidently meant for the king's residence, rather than for a temple or place exclusively devoted to worship.

The palace at Luxor is further remarkable as a striking instance of how regardless the Egyptians were of regularity and symmetry in their plans. Not only is there a considerable angle in the direction of the axis of the building, but the angles of the courtyards are hardly ever right angles; the pillars are variously spaced, and pains seem to have been gratuitously taken to make it as irregular as possible in nearly every respect. All that part on the southern end was erected by Amenophis III., the northern part completed by Rhamses the Great, the same who built the Rhamession already described as situated on the other bank of the Nile.



171. South Temple of Karnac. Scale 100 ft. to 1 in.

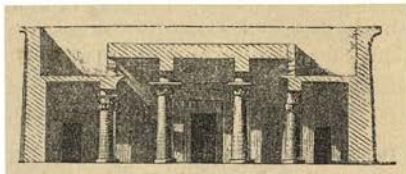
Besides these there stood on the western side of the Nile the Memnonium, or great temple of Amenophis III., now almost entirely ruined, having been placed on the alluvial plain, within the limits of the inundation, which has tended on the one hand to bury it, and on the other to facilitate the removal of its materials. Nearly the only remains of it now apparent are the two great seated colossi of its founder, one of which, when broken, became in Greek, or rather Roman times, the vocal Memnon, whose plaintive wail to the rising sun, over its own and its country's desolation, forms so prominent an incident in the Roman accounts of Thebes.

Not far from this stood the great temple of Medinet-Habou, built by Rhamses III., the first king of the 19th dynasty. This, though scarcely inferior in size to its neighbour, shows a manifest inferiority of art,—as if Egypt's great days were already fast passing away. Further down the river stood another temple, that of Gournou, built by the same Manepthah who erected the great hall of Karnac. This, however, appears only to have been a residence, and both in style and size the least remarkable of the great buildings whose wondrous remains still adorn the site of the hundred-gated city.

Another building of this age, attached to the southern side of the great temple at Karnac, deserves especial attention as being a perfectly regular building, erected at one time, and according to the original design, and being literally a

temple, without anything about it that could justify the supposition of its being a palace.

It was erected by the first king of the 19th dynasty, and consists of two pylons, approached through an avenue of sphinxes. Within this is an hypæthral court, and beyond that a small hypostyle hall, lighted from above, as shown in the section. Within this is the cell, surrounded by a passage, and with a smaller hall beyond, all apparently dark, or very imperfectly lighted. The gateway in front of the avenue was erected by the Ptolemies, and, like many Egyptian buildings, placed at a different angle to the direction of the building itself. Besides its intrinsic beauty, this temple is interesting as being far more like the temples erected afterwards under the Greek and Roman domination than anything else belonging to that early age.



172. Section on A B of above. Scale 50 ft. to 1 in.

There are, or were, many other great works of this great age scattered over the whole length and breadth of the country, from Tanis, or Soan, near the mouth of the Nile, where the remains of 13 obelisks can still be traced, to Soleb, on the borders of Nubia, where now stands a temple of the third Amenophis, scarcely inferior in beauty or magnificence to those of the capital. Those at Memphis, at Abydos, many of those at Thebes, and elsewhere, are so completely ruined, that it is impossible to restore them, or to judge of their effect architecturally. Nor do they seem to possess any peculiarities which are not found in those already mentioned.

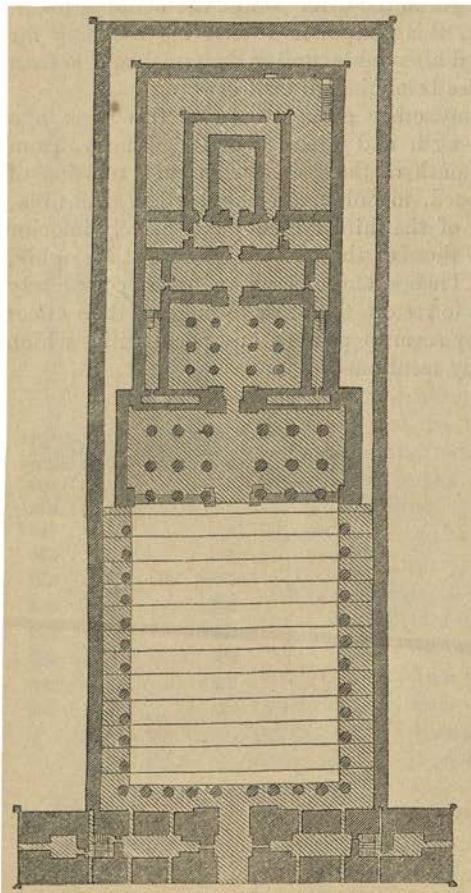
CHAPTER III.

MODERN STYLES.

CONTENTS.

Decline of art — Temples at Dendera — Kalabsche — Philæ — Mammeisi — Rock-cut examples—Ipsamboul—Tombs—Labyrinths—Obelisks—Domestic architecture.

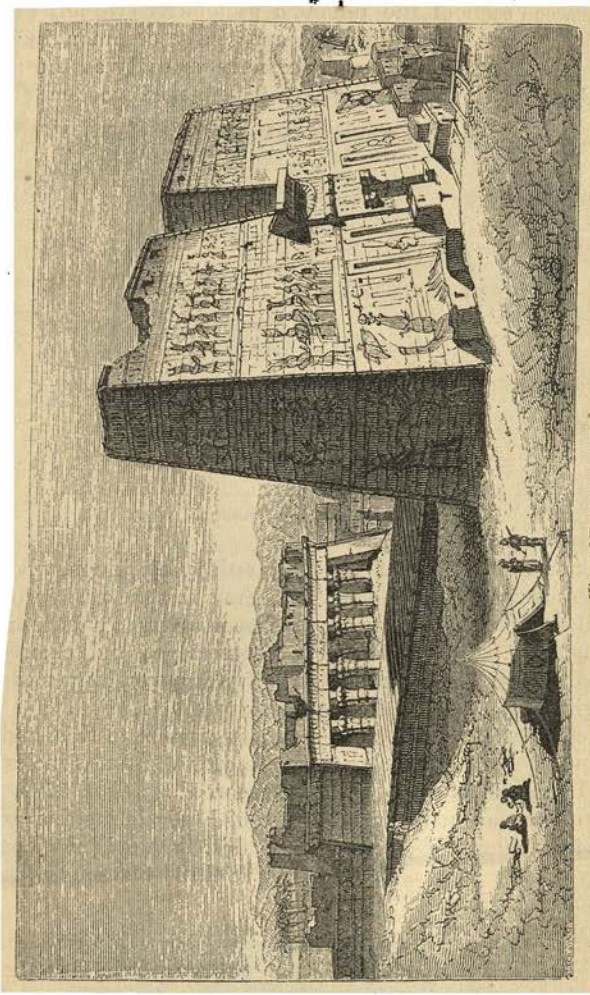
From the time of the 19th dynasty, with a slight revival under the Bubastite kings of the 22nd dynasty, Egypt sank through a long period of decay, till her misfortunes were consummated by the invasion of the Persians under Cambyses, 525 B.C. From that time she served in a bondage more destructive, if not so galling, as that of the Shepherd domination, till relieved by the more enlightened policy of the Ptolemies. Under them she enjoyed as great material prosperity as under the Pharaohs; and her architecture and her arts too revived, not, it is true, with the greatness or the purity of the great national era, but still with much richness and material splendour.



173. Plan of Temple at Edfou, Apollonopolis Magna.
Scale 100 ft. to 1 in.

Some of the temples of this age are, as far as dimensions and richness of decorations are concerned, quite worthy of the great age, though their plans and arrangements differ to a considerable extent. There is now no hesitation as to whether they should be called temples or palaces: all is now exclusively devoted to worship,—and to the worship of a heavenly God, not of a deified king.

What these arrangements are will be well understood from the annexed plan of that of Edfou (woodcut No. 173), which, though not the largest, is the most complete of those remaining. It is 450 ft. in length, and 155 in width, and covering upwards of 80,000 ft.; its dimensions may be said to be equal to those of the largest of our mediæval cathedrals (Cologne or Amiens for instance). Part only of



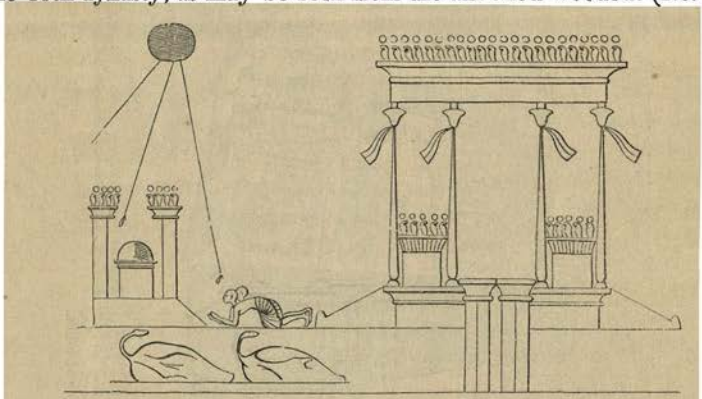
View of Temple at Edfou.

174.

the whole structure (that which is shaded in the plan) is roofed, and therefore it can scarcely be compared with buildings entirely under one roof.

In front of the temple are two large and splendid pylons, with the gateway in the centre, making up a façade 225 ft. in extent. Although this example has lost its crowning cornice, its sculptures and ornaments are still very perfect, and it may altogether be con-

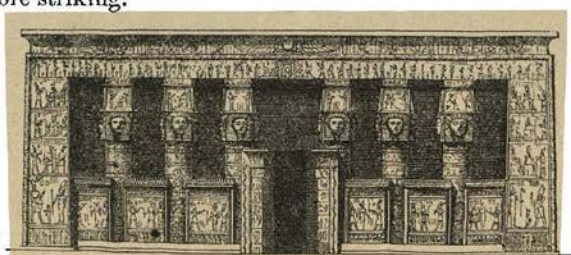
sidered as a fair specimen of its class, though inferior in dimensions to many of those of the great Pharaonic age. Within these is a court, 140 ft. by 161, surrounded by a colonnade on three sides, and rising by easy steps, the whole width of the court, to the porch or portico which, in Ptolemaic temples, takes the place of the great hypostyle halls of the Pharaohs. It is lighted from the front over low screens placed between each of the pillars, a peculiarity scarcely ever found in temples of earlier date, though apparently common in domestic edifices, or those formed of wood, certainly as early as the middle of the 18th dynasty, as may be seen from the annexed woodcut (No. 175),



175. Bas-relief at Tell el Amarna.

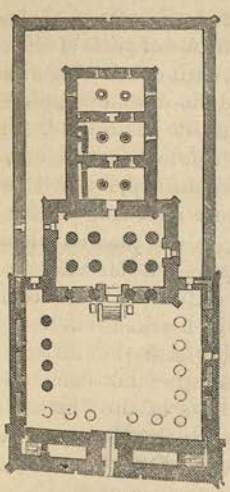
taken from a tomb of one of the sun-worshipping kings, who reigned between Amenophis III. and Horus. From this we pass into an inner and smaller porch, and again through two passages to a dark and mysterious sanctuary, surrounded by darker passages and chambers, well calculated to mystify and strike with awe any worshipper or neophyte who might be admitted to their gloomy precincts.

The celebrated temple at Dendera is similar to this, and slightly larger, but it has no forecourt, no propylons, and no enclosing outer walls. Its façade is given in the next woodcut (No. 176). Its Isis-headed columns are not equal to those of Edfou in taste or grace; but it has the advantage of situation, and this temple is not encumbered either by sand or huts, as the other is, so that its effect on travellers is always more striking.

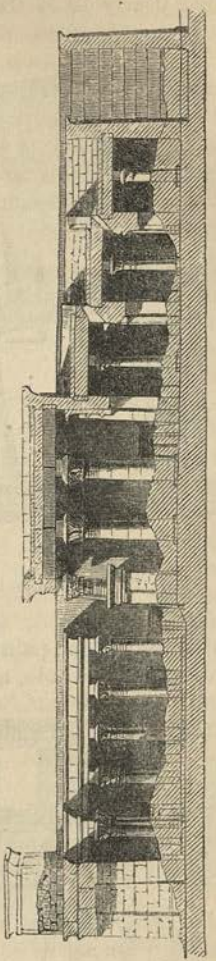


176. Façade of Temple at Dendera.

The Roman temple at Kalabsche (woodcut No. 177), above the Cataract, is a fair specimen of these temples on a smaller scale. The section (woodcut No. 178) shows one of the modes by which a scanty light was introduced into the inner cells, and their gradation in height. The position, too, of its propylons is a striking instance of the irregularity which distinguishes all the later Egyptian styles from that of the rigid, proportion-loving, pyramid-builders of Memphis.



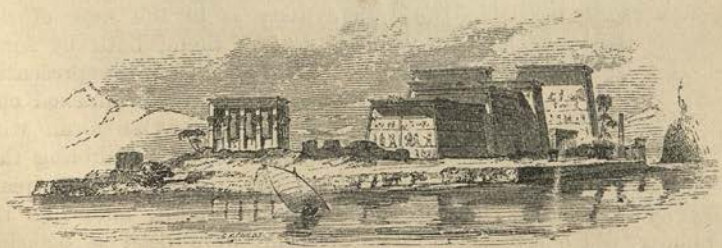
177. Plan of Temple at Kalabsche.



Section of Temple at Kalabsche.

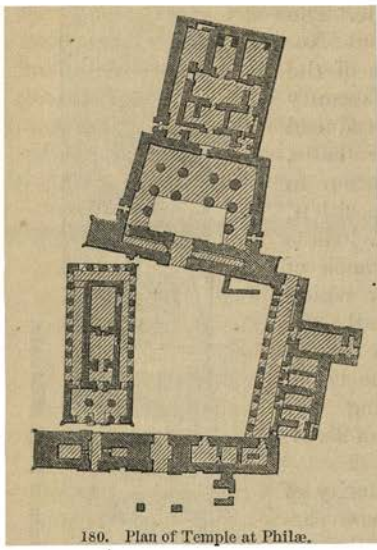
178.

This irregularity of plan was nowhere carried to such an extent as in the Ptolemaic temple on the island of Philæ. Here no two buildings, scarcely any two walls, are on the same axis or parallel to one another. No Gothic architect in his wildest moments ever played so freely with his lines or dimensions, and none, it must be added, ever produced anything so beautifully picturesque as this. It contains all the play of light and shade, all the variety of Gothic art, with the massiveness and grandeur of the Egyptian style; and as it is still tolerably entire, and retains much of its colour, there is no building out of Thebes that gives so favourable an impression of Egyptian art as this. It is true it is far less sublime than many, but hardly one can be quoted as more beautiful than it is.

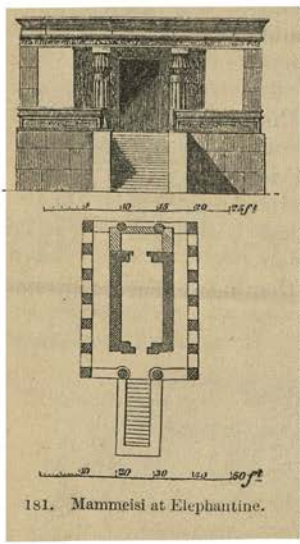


179. View of Temple at Philæ.

Notwithstanding its irregularity, this temple has the advantage of being nearly all of the same age, and erected according to one plan, while the greater buildings at Thebes are often aggregations of parts of different ages; and though each is beautiful in itself, the result is often not quite so harmonious as might be desired. In this respect the Ptolemaic temples certainly have the advantage, inasmuch as they are all of one age, and all completed according to the plan on which they were designed, a circumstance which, to some extent at least, compensates for their marked inferiority in size and style, and the littleness of all the ornaments and details as compared with those of the Pharaonic period. It must at the same time be admitted that this inferiority is more apparent in the sculpture of the Ptolemaic age than in its architecture. The general design of the buildings is frequently grand and imposing, but the details are always inferior; and the sculpture and painting, which in the great age add so much to the beauty of the whole, are in the Ptolemaic age always frittered away, ill-arranged, and unmeaning—injurious to the general effect instead of heightening and improving it.



180. Plan of Temple at Philæ.



181. Mammeisi at Elephantine.

Mammeisi.

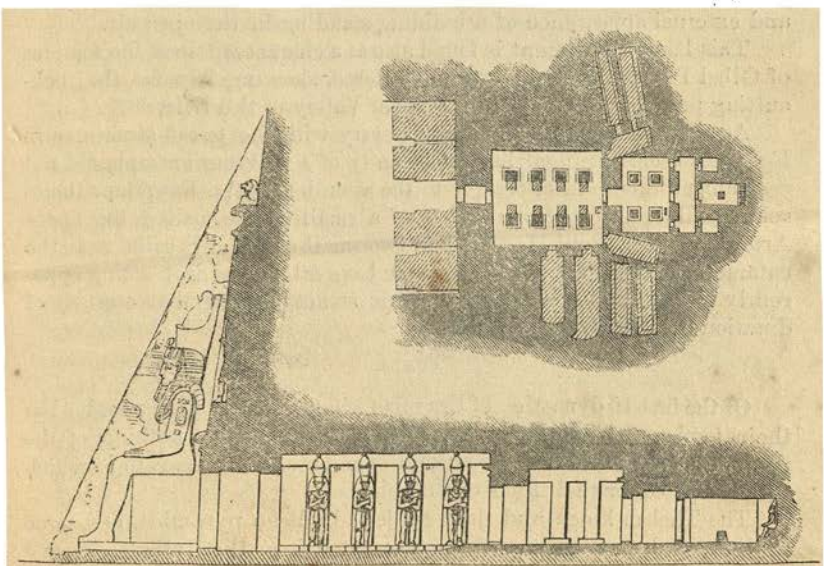
Besides the temples above described, which are all more or less complex in plan, and all made up of various independent parts, there exists in Egypt a class of temples called *mammeisi*, dedicated to the mysterious accouchement of the mother of the gods. Small temples of this form are common to all ages, and belong as well to the 18th dynasty as to the time of the Ptolemies. One of them, built by Amenophis III. at Elephantine, is represented in plan and elevation in the annexed cut. It is of a simple peristylar form, with columns in front and rear, resembling that shown in woodcut No. 157, and 7 square piers on each flank. These temples are all small, and, like the Typhonia, which somewhat resemble them, were used as detached chapels or cells, dependent on the larger temples. What renders

them more than usually interesting to us is the fact that they were undoubtedly the originals of the Greek peristylar forms, that people having borrowed nearly every peculiarity of their arts from the banks of the Nile. We possess the tangible evidence of peristylar temples and proto-Doric pillars, erected in Egypt centuries before the oldest known specimen in Greece. We need therefore hardly hesitate to award the palm of invention of these things to the Egyptians, as we should probably be forced to do of most of the arts and sciences of the Greeks if we had only knowledge sufficient to connect them.

ROCK-CUT TOMBS AND TEMPLES.

Both in Egypt Proper and in Nubia the Egyptians were in the habit of excavating monuments from the living rock, but with this curious distinction, that, with scarcely an exception, all the excavations in Egypt Proper are tombs, and no important example of a rock-cut temple has yet been found. In Nubia, on the other hand, all the excavations are temples, and no tombs of importance are to be found anywhere. This distinction may hereafter lead to important historical deductions, inasmuch as on the western side of India there are, as has already been pointed out, an infinite number of rock-cut temples, but no tombs of any sort. Every circumstance seems to point to the fact that, if there was any connection between Africa and India, it was with the provinces of the upper part of the Valley of the Nile, and not with Egypt Proper. This, however, is a subject that can hardly be entered on here, though it may be useful to bear in mind the analogy alluded to.

Like all rock-cut examples all over the world, these Nubian temples are copies of structural buildings, only more or less modified to suit



182. Plan and Section of Rock-cut Temple at Ipsamboul. Scale for plan 100 ft. to 1 in.; section 50 ft. to 1 in.

the exigencies of their situation, which did not admit of any very great development inside, as light and air could only be introduced from the one opening of the doorway.

The two principal examples of this class of monument are the two at Ipsamboul, the largest of which is the finest of its class known to exist anywhere. Its total depth from the face of the rock is 150 ft., divided into 2 large halls and 3 cells, with passages connecting them.

Externally the façade is about 100 ft. in height, and adorned by 4 of the most magnificent colossi in Egypt, each 70 ft. in height, and representing the King Rhamses II., who caused the excavation to be made. It may be because they are more perfect than any others now found in that country, but certainly nothing can exceed their calm majesty and beauty, or be more entirely free from the vulgarity and exaggeration which is generally a characteristic of colossal works of this sort.

The smaller temple at the same place has 6 standing figures of deities countersunk in the rock, and is carved with exceeding richness. It is of the same age with the large temple, but not to be compared with it owing to the inferiority of the design.

Besides these, there is a very beautiful though small example at Kalabsche, likewise belonging to the age of Rhamses II., and remarkable for the beauty of its sculptural bas-reliefs, as well as for the bold proto-Doric columns which adorn its vestibule. There are also smaller ones at Derri and Balagne, at the upper end of the valley. At Essabua, Girsheh, and Dandour, the cells of the temple have been excavated from the rock, but their courts and propylons are structural buildings added in front—a combination never found in Egypt, and very rare anywhere else, although meeting the difficulties of the case better than any other arrangement, inasmuch as the sanctuary has thus all the imperishability and mystery of a cave, and the temple at the same time has the space and external appearance of a building standing in the open air.

This last arrangement is found also as a characteristic of the temples of Gibel Barkal, in the kingdom of Meroë, showing how far the rock-cutting practice prevailed in the upper Valley of the Nile.

As all these temples are contemporary with the great structures in Egypt, it seems strange that the eternity of a rock-cut example did not recommend this form of temple to the attention of the Egyptians themselves. But with the exception of a small grotto, called the Speos Artemidos, near Beni Hassan, and two small caves at Silsilis, near the cataract, the Egyptians seem never to have attempted it, trusting apparently to the solidity of their masonic structures for that eternity of duration they aspired to.

Tombs.

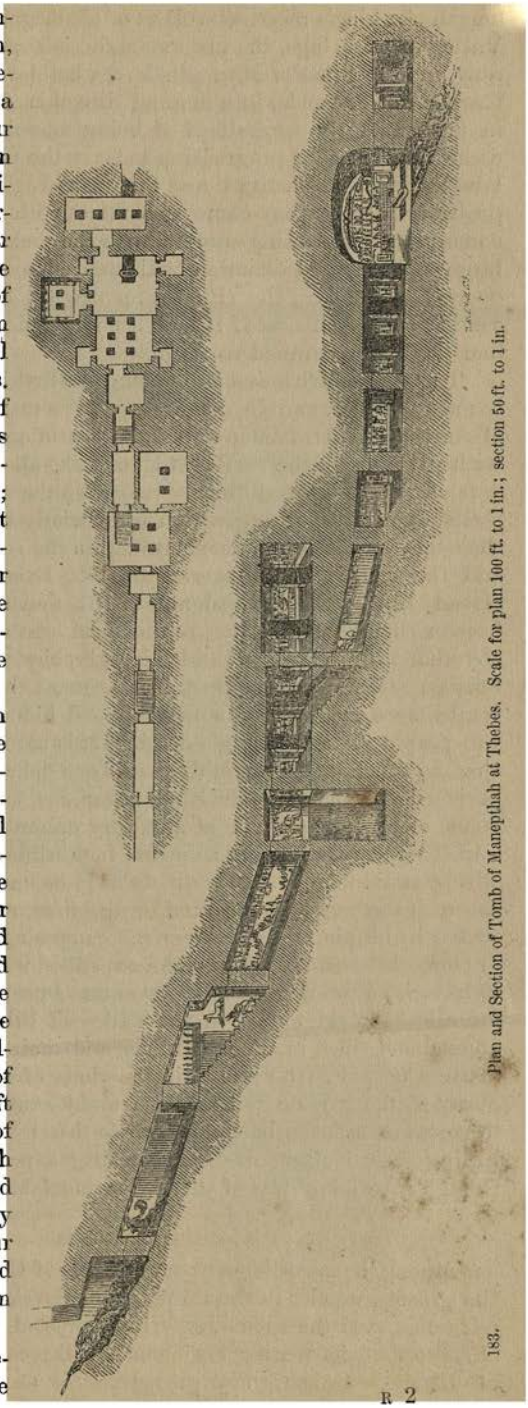
Of the first 10 dynasties of Egyptian kings nothing now remains but their tombs—the everlasting pyramids—and little or nothing of the people they governed but the structures and rock-cut excavations which they prepared for their final resting-places.

The Theban kings and their subjects built no pyramids, and none of their tombs are built—all are excavated from the living rock; and from Beni Hassan to the cataract, the plain of the Nile is everywhere

fringed with these singular monuments, which, if taken in the aggregate, perhaps required a greater amount of labour to excavate and to adorn than did even all the edifices of the plain. Certain it is that there is far more to be learnt of the arts, of the habits, and of the history of Egypt from these tombs than from all the other monuments. No tomb of any king of the Theban dynasties has yet been discovered anterior to the 18th dynasty; but all the tombs of that and of the subsequent dynasty have been found, or are known to exist, in the Valley of Biban-el-Melouk, on the western side of the plain of Thebes.

It seems to have been the custom with these kings, as soon as they ascended the throne, to begin preparing their final resting-place. The excavation seems to have gone on uninterruptedly year by year, the painting and adornment being finished as it progressed, till the hand of death ended the king's reign, and simultaneously the works of his tomb. All was left unfinished; the cartoon of the painter and the rough work of the mason and plasterer were suddenly broken off, as if the hour of the king's demise called them too irrevocably from their labours.

The tomb thus became an index of the



183. Plan and Section of Tomb of Maneptlah at Thebes. Scale for plan 100 ft. to 1 in.; section 50 ft. to 1 in.

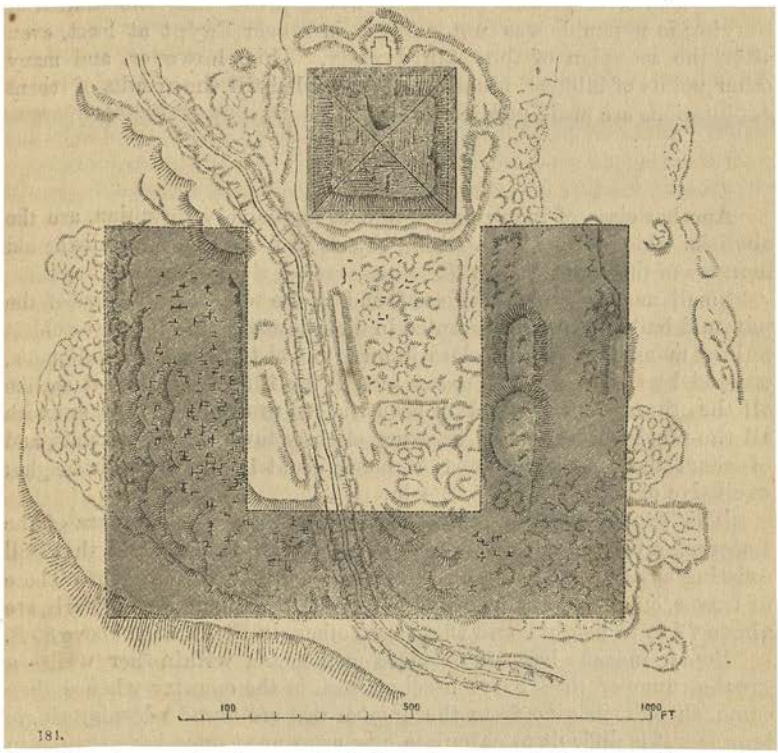
length of a king's reign, as well as of his magnificence. Of those in the Valley of the Kings, the most splendid is that opened by Belzoni, and now known as that of Manepthah, the builder of the Hypostyle hall at Karnac. It descends, in a sloping direction, for about 350 ft. into the mountain, the upper half of it being tolerably regular in plan and direction; but after progressing as far as the unfinished hall with 2 pillars, the direction changes, and the works begin again on a lower level, probably because they came in contact with some other tomb, or in consequence of meeting some flaw in the rock. It now terminates in a large and splendid chamber with a coved roof, in which stood, when opened by Belzoni, the rifled sarcophagus; but a drift-way has been carried beyond this, as if it had been intended to carry it still further had the king continued to reign.

The tomb of Rhamses Maiamoun, the first king of the 19th dynasty, is more regular, and in some respects as magnificent as this, and that of Amenophis III. is also an excavation of great beauty, and adorned with paintings of the very best age. Like all the tombs, however, they depend for their magnificence more on the paintings that adorn the walls than on anything which can strictly be called architecture, so that they hardly come properly within the scope of the present work; and the same is true of private tombs. Except those of Beni Hassan, already illustrated by woodcut No. 161, they are all either mere chambers or corridors, without architectural ornament, but with their walls covered with paintings and hieroglyphics of singular interest and beauty. Generally speaking, it is assumed that the entrances of these tombs were meant to be concealed and hidden from the knowledge of the people after the king's death. It is hardly conceivable, however, that so much pains should have been taken, and so much money lavished, on what was designed never again to testify to the magnificence of its founder. It is also very unlike the sagacity of the Egyptians to attempt what was so nearly impossible; for though the entrance of a pyramid might be so built up as to be unrecognisable, a cutting in the rock can never be repaired or disguised, and only temporarily concealed by heaping rubbish over it. Supposing it to have been intended to conceal the entrances, such an expedient was as clumsy and unlikely to have been resorted to by so ingenious a people as it has proved futile, for all the royal tombs in the Valley of Biban-el-Melouk have been opened and rifled in ancient times, and their sites and numbers were matters of public notoriety in the times of the Greeks and Romans. Many of the private tombs have architectural façades, and certainly never were meant to be concealed, so that it is not fair to assume that hiding their tombs' entrances was ever a peculiarity of the Thebans, though it certainly was of the earlier Memphites.

Labyrinths.

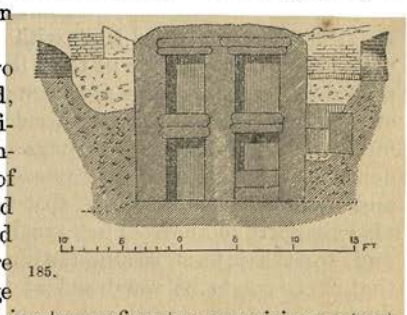
Among the miscellaneous monuments of Egypt, the one that excited the greatest wonder in the minds of the Greeks, not even excepting the pyramids, was the great Labyrinth, erected, it was said, by Mœris, close to the lake bearing his name. Till recently its site was a matter of dispute. It is rightly placed in Sir G. Wilkinson's map of the

Fayoom, published in 1828; but the question was not entirely set at rest till it was absolutely determined by Mr. Perring when employed by Colonel Vyse, and the whole was afterwards excavated by the officers of the Prussian expedition under Lepsius. Like everything, however, of interest discovered by that *savant*, the information obtained is kept back, and we have only imperfect sketches of its general f rm. From



181.

these it appears that it was a building about 1150 ft. east and west, by 850 north and south, surrounding 3 sides of a courtyard 500 ft. in one direction by 600 ft. in the other; the fourth side was occupied by a small pyramid of rather more than 300 ft. square (Strabo says 400).



185.

A number of small chambers, two stories in height, have been found, but nothing indicating that magnificence which so excited the astonishment of the Greeks. The facility of water-carriage may have enabled those who subsequently occupied the country to remove all the more precious materials, as they have done from Memphis. Enough remains to confirm to a surprising extent the accounts of Herodotus and Strabo, at least so far as we can judge

from the meagre accounts of the excavation that have been made public; but till the whole are available, it is needless either attempting to reason on them, or to attempt any restoration of the whole.

The name of Amememha, of the 12th dynasty, has been found among the ruins, proving what was before conjectured, that he was in reality the founder of the monument in question; and if the pyramid be really his sepulchre, as Strabo asserts, it would prove that the fashion of burying in pyramids was not extinct, in Lower Egypt at least, even after the accession of the 12th dynasty. This, however, and many other points of interest, must remain unsettled till the results of recent explorations are made public.

Obelisks.

Another class of monuments, almost exclusively Egyptian, are the obelisks which form such striking objects in front of almost all the old temples of the country.

Small models of obelisks are found in the tombs of the age of the pyramid-builders, and represented in their hieroglyphics; but the oldest public monument of the class known to exist is that at Heliopolis, erected by Osortasen, the great king of the 12th dynasty. It is, like all the others, a single block of beautiful red granite of Syene, cut with all the precision of the age, tapering slightly towards the summit, and of about the average proportion, being about 10 diameters in height; exclusive of the top it is 67 ft. 4 in.

The two finest known to exist are, that now in the piazza of the Lateran, erected by Thothmes III., 105 ft. in height, and that still existing at Karnac, erected by Thothmes I., 93 ft. 6 in. in height. Those of Luxor, erected by Rhamses the Great, one of which is now in Paris, are above 77 ft. in height; and there are 2 others in Rome, each above 80 ft.

Rome, indeed, has 12 of these monuments within her walls—a greater number than exist, erect at least, in the country whence they came, though, judging from the number that are found adorning single temples, it is difficult to calculate how many must once have existed in Egypt. Their use seems to have been wholly that of monumental pillars, recording the style and titles of the king who erected them, his piety, and the proof he gave of it in dedicating these monoliths to the deity whom he especially wished to honour.

It has been remarked that, with scarcely an exception, all the pyramids are on the west side of the Nile, all the obelisks on the east: with regard to the former class of monument, this probably arose from a law of their existence, the western side of the Nile being in all ages preferred for sepulture, but with regard to the latter it seems to be accidental. Memphis doubtless possessed many monuments of this class, and there is reason to believe that the western temples of Thebes were also similarly adorned. They are, however, monuments easily broken; and, from their form, so singularly useful for many building purposes, that it is not to be wondered at if many of them have disappeared during the many centuries that have elapsed since the greater number of them were erected.

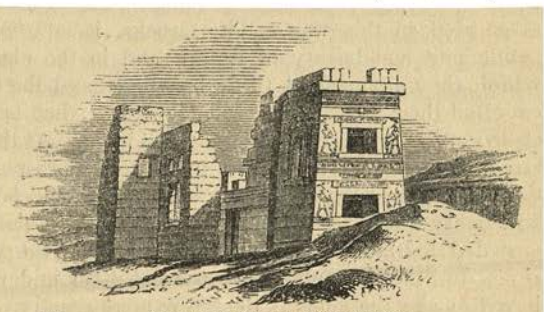
DOMESTIC ARCHITECTURE.

Except one small royal pavilion at Medinet Habou, no structure now remains in Egypt that can fairly be claimed as a specimen of the domestic architecture of the ancient Egyptians; but at the same time we possess, in paintings and sculptures, so many illustrations of their domestic habits, so many plans, elevations, and views, and even models of their dwellings of every class, that we have no difficulty in forming a correct judgment not only of the style, but of the details, of their domestic architecture.

Although their houses exhibited nothing of the solidity and monumental character which distinguished their temples and palaces, they seem in their own kind to have been scarcely less beautiful. They were of course on a smaller scale, and built of more perishable materials, but they appear to have been as carefully finished, and decorated with the same taste displayed in the greater works. We know also, from the tombs that remain to us, that, although the government of Egypt was a despotism of the strictest class, still the wealth of the land was pretty equally diffused among all classes, and that luxury and splendour were by no means confined either to the royal family or within the precincts of the palace. There is thus every reason to believe that the cities which have passed away were worthy of the temples that adorned them, and that the streets were as splendid and as tasteful as the public buildings themselves, and displayed, though in a more ephemeral form, the same wealth and power which still astonish us in the great monuments that remain.

No building can form a greater contrast with the temple behind it than does the little pavilion erected at Medinet Habou by Rhamses, the

186. Pavilion at Medinet Habou.

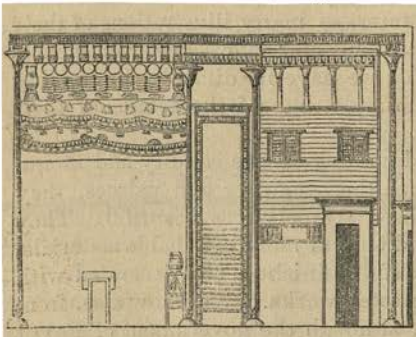


187. View of Pavilion at Medinet Habou.

first king of the 19th dynasty. As will be seen by the annexed plan (woodcut No. 186), it is singularly broken and varied in its outline, surrounding a small court in the shape of a cross. It is 3 stories in height, and, properly speaking, consists of only 3 rooms on each floor, connected together by long winding passages. There is reason, however, to believe that this is only a fragment of the building, and foundations exist which render it probable that the whole was originally a square of the width of the front, and had other chambers, probably only in wood or brick, besides those we now find. This would hardly detract from the playful character of the design, and when

coloured, as it originally was, and with its battlements or ornaments complete, it must have formed a composition as pleasing as it is unlike our usual conceptions of Egyptian art.

The other illustration represents in the Egyptians' own quaint style a 3-storied dwelling, the upper story apparently being like those of the Assyrians, an open gallery supported by dwarf columns. The lower windows are closed by shutters. In the centre is a staircase leading to the upper story, and on the left hand an awning supported on wooden pillars, which seems to have been an indispensable part of all the better class of dwellings. Generally speaking, these houses are shown as situated in gardens laid out in a quaint formal style, with pavilions, and fishponds, and all the other accompaniments of gardens in the East at the present day.



188. Elevation of a House. From an Egyptian painting.

In all the conveniences and elegances of building they seem to have anticipated all that has been done in those countries down to the present day. Indeed, in all probability, the ancient Egyptians surpassed the modern in those respects as much as they did in the more important forms of architecture.

Taken altogether, perhaps it may be safely asserted that the Egyptians were the most essentially a building people of all those we are acquainted with, and the most generally successful in all they attempted in this way. The Greeks, it is true, surpassed them in refinement and beauty of detail, and in the class of sculpture with which they ornamented their buildings, and the Gothic architects far excelled them in constructive cleverness; but besides these no other style can be put in competition with them. At the same time, neither Grecian nor Gothic architects understood more perfectly all the gradations of art, and the exact character that should be given to every form and every detail. Whether it was the plain flat-sided pyramid, the crowded and massive hypostyle hall, the playful pavilion, or the luxurious dwelling—in all these the Egyptian understood perfectly both how to make the general design express exactly what he wanted, and to make every detail, and all the various materials, contribute to the general effect. They understood, also, better than any other nation, how to use sculpture in combination with architecture, and to make their colossi and avenues of sphinxes group themselves into parts of one great design, and at the same time to use historical paintings, fading by insensible degrees into hieroglyphics on the one hand, and into sculpture on the other—linking the whole together with the highest class of phonetic utterance, and with the most brilliant colouring, thus harmonising all these arts into one great whole, unsurpassed by anything the world has seen during the thirty centuries of struggle and aspiration that have elapsed since the brilliant days of the great kingdom of the Pharaohs.

CHAPTER IV.

ETHIOPIA.

CONTENTS.

Kingdom of Meroë — Pyramids — Invention of the Arch.

IT was long a question with the learned whether civilisation ascended or descended the Nile—whether it was a fact, as the Greeks evidently believed, that Meroë was the parent state whence the Egyptians had migrated to the north, bringing with them the religion and the arts which afterwards flourished at Thebes and Memphis, — or whether these had been elaborated in the fertile plains of Egypt, and only in later times had extended to the Upper Nile.

Recent discoveries have rendered it nearly certain that the latter is the correct statement of the facts—within historic times at least—that the fertile and easily cultivated Delta was first occupied and civilised, then Thebes, and afterwards Meroë. At the same time it is by no means improbable that the Ethiopians were of the same stock as the Thebans, though differing essentially from the Memphites, and that the former may have regarded these remote kindred with respect, perhaps even with a degree of half-superstitious reverence due to their remote situation in the centre of a thinly peopled continent, and have in consequence invented those fables which the Greeks interpreted too literally.

If any such earlier civilisation existed in these lands, its records and its monuments have perished. No building is now found in Meroë whose date extends beyond the time of the great king Tirhakah, of the 25th Egyptian dynasty, B.C. 724 to 680, unless it be those bearing the name of one king, Amoum Gori, who was connected with the intruding race of sun-worshippers, which broke in upon the continuous succession of the kings of the 18th dynasty. Their monuments were all purposely destroyed by their successors; and the only records we have of them are the grottoes of Tell el Amarna, covered with their sculptures, which bear, it must be confessed, considerable resemblance in style to those found in Ethiopia. Even this indication is too slight to be of much value; and we must wait for some further confirmation before founding any reasoning upon it.

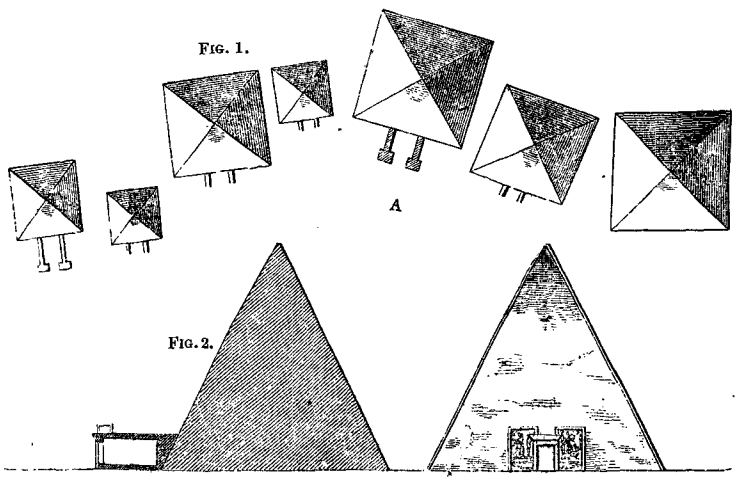
The principal monuments of Tirhakah are two temples at Gibel Barkal, a singular isolated mount near the great southern bend of the river. One is a large first-class temple, of purely Egyptian form and design, about 500 ft. in length, by 120 or 140 in width, consisting of

two great courts, with their propylons, and the internal halls and sanctuaries are arranged much like those of the Rhamession at Thebes (woodcut No. 167), and so nearly also on the same scale as to make it probable that the one is a copy of the other.

The other temple placed near this, but as usual unsymmetrically, consists of an outer hall, internally about 50 ft. by 60, whose roof is supported by 4 ranges of columns, all with capitals representing figures of Typhon or busts of Isis. This leads to an inner cell or sanctuary, cut in the rock.

There are smaller remains strewed about, indicating the existence of a city on the spot, but nothing of architectural importance.

The most remarkable monuments of the Nubian kingdom are the pyramids, of which 3 great groups have been discovered and described. The principal group is at a place called Dankelah, the assumed site of the ancient Meroë, in latitude 17° north. Another is at Gibel Barkal; the third at Nourri, a few miles lower down than the last named, but probably only another necropolis of the same city.



189. Pyramids at Meroë. From Hoskins' Travels in Ethiopia.

Fig. 1.—Plan of Principal Group. Scale 100 ft. to 1 inch.

Fig. 2.—Section and Elevation of that marked A. Scale 50 ft. to 1 inch.

Compared with the great Memphite examples, these pyramids are most insignificant in size—the largest at Nourri being only 110 ft. by 100; at Gibel Barkal the largest is only 88 ft. square; at Meroë none exceed 60 ft. each way. They differ also in form from those of Egypt, being much steeper, as their height is generally equal to the width of the base. They also all possess the roll-moulding on their angles, and all have a little porch or pronaos attached to one side, generally ornamented with sculpture, and forming either a chapel, or more probably the place where the coffin of the deceased was placed. We know from the Greeks that, so far from concealing the bodies of their dead, the Ethiopians had a manner of preserving them in some trans-

parent substance, so as to render them permanently visible after death.[1]

To those familiar with the rigid orientation of those of Lower Egypt, perhaps the most striking peculiarity of them is the more than Theban irregularity with which they are arranged, no two being ever placed, except by accident, at the same angle to the meridian, but the whole being grouped with the most picturesque irregularity, as chance seemed to dictate.

Among their constructive peculiarities it may be mentioned that they seem all to have been first built in successive terraces, each diminishing from that below it, something like the great pyramid at Saccara (woodcut No. 158), and were afterwards smoothed over by the external coating.

Like the temples of Gibel Barkal, all these buildings seem to belong to the Tirhakah epoch of the Ethiopian kingdom. It is extremely improbable that any of them are as old as the time of Solomon, or that any are later than the age of Cambyses, every indication seeming to point to a date between these two great epochs in the connection of African history and that of Asia.

The ruins at Wady-el-Ooatib, a little further up the Nile than Meroë, should perhaps be also mentioned here, if only from the importance given to them by Heeren, who thought he had discovered in them the ruins of the temple of Jupiter Ammon. They are, however, all in the debased style of the worst age of Ptolemaic or Roman art in this country. They are wholly without hieroglyphics, or any indication of sanctity or importance, and there can be little doubt that they are the remains of a caravanserai on the great commercial route between Egypt and Axoum, along which the greater part of the trade of the East arrived at Alexandria in the days of its magnificence.

INVENTION OF THE ARCH.

Before leaving the subject of Egyptian architecture, it may be as well briefly to refer to the invention of the true arch, regarding which considerable misconception still exists.

It is generally supposed that the early Egyptians were ignorant of the true principles of the arch, and only employed two stones meeting one another at a certain angle in the centre when they wished to cover a larger space than could conveniently be done by a single block. This, however, seems to be a mistake, as many of the tombs and chambers around the pyramids are roofed by stone arches of a semicircular form, and perfect in every respect as far as the principles of the arch are concerned.

Several of these have been drawn by Lepsius, and are engraved in his work, but, as no text accompanies them, and the drawings are not on a sufficient scale to make out the hieroglyphics, where any exist, their date cannot now be ascertained. Consequently these examples

[1] Herodotus, iii. 24. Diodorus, ii. 15.

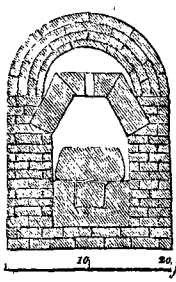
cannot yet be used as the foundation of any argument on the subject, though the curved form of the roofs in the third pyramid would alone be sufficient to render it more than probable that during the period of the 4th dynasty the Egyptians were familiar with this expedient.

At Beni Hassan, during the time of the 12th dynasty, curvilinear forms reappear in the roofs (woodcut No. 160), used in such a manner as to render it almost certain that they are copied from roofs of construction. Behind the Rhamession at Thebes there are a series of arches in brick, which seem undoubtedly to belong to the same age[1] as the building itself; and Sir G. Wilkinson mentions a tomb at Thebes, the roof of which is vaulted with bricks, and still bears the name of Amenoph I., of the 18th dynasty.

The temple at Abydos, erected by Rhamses II., shows the same peculiarity as the tombs at Beni Hassan, of a flat segmental arch thrown across between the stone architraves. In this instance it is also a copy in stone, but such as must have been copied from brick construction. There is also every reason to believe that the apartments of the little pavilion at Medinet Habou (woodcut No. 186) were covered with semicircular vaults, though these have now disappeared.[2]

In Ethiopia Mr. Hoskins found stone arches vaulting the roofs of the porches of the pyramids, perfect in construction, and, what is still more singular, showing both circular and pointed forms. These, as before remarked, are probably of the time of Tirhakah, or, at all events, not earlier than the age of Solomon, nor later than that of Cambyses.

In the age of Psammeticus we have several stone arches in the neighbourhood of the pyramids; one, in a tomb at Saccara, has been frequently drawn; but one of the most instructive is that in a tomb discovered by Colonel Campbell (woodcut No. 190), showing a very primitive form of an arch composed of 3 stones only, and above that is another arch of regular construction of 4 courses. In his researches at Nimroud, Layard discovered vaulted drains and chambers below the north-west and south-east edifices, which were consequently as old as the 8th or 9th century before our era, and contemporary with those in the pyramids of Meroë. They were of both circular and pointed forms, and constructed apparently with great care and attention to the principles of the arch (woodcut No. 191).



190. Section of Tomb near the Pyramids of Gizeh.

The great discovery of this class is that of the city gates at Khorsabad, which, as mentioned above (p. 173), were spanned by arches of semicircular form, so perfect both in construction and in the mode in which they were ornamented, as to prove that in the time of Sargon the arch was a usual and well-understood building expedient, and one consequently which we may fairly assume to have been long in use.

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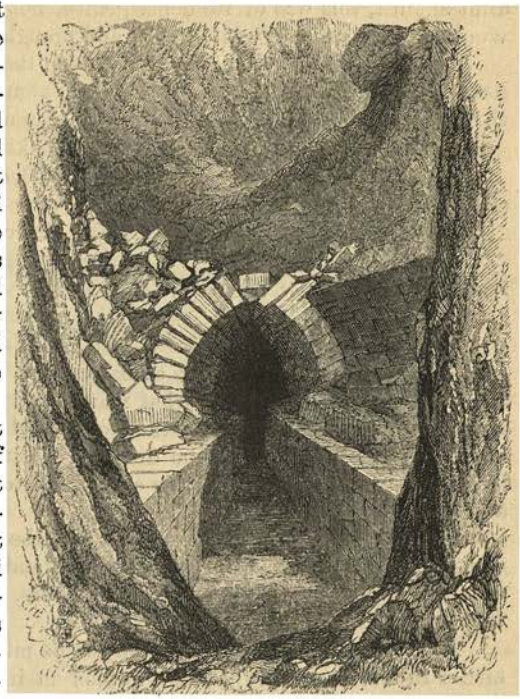
[1] 'Egypt and Thebes,' pp. 81 and 126.
[2] Wilkinson's 'Manners and Customs of the Egyptians,' vol. iii. p. 263.

So far as we can now understand from the discoveries that have been made, it seems that the Assyrians used the pointed arch for tunnels, aqueducts, and generally for underground work where they feared great superincumbent pressure on the apex, and the round arch above ground where that was not to be dreaded; and in this they probably showed more science and discrimination than we do in such works.



191. Vaulted Drain beneath the South-East Palace at Nimroud.

In Europe the oldest arch is probably that of the Cloaca Maxima at Rome, constructed under the early kings. It is of stone in 3 rims, and shows as perfect a knowledge of the principle as any subsequent example. Its lasting uninjured to the present day proves how well the art was then understood, and, by inference, how long it must have been practised before reaching that degree of perfection.

From all this it becomes almost certain that the arch was used as early as the times of the pyramid-builders of the 4th dynasty, and was copied in the tombs of Beni Hassan in the 12th; though it may be that the earliest existing example cannot be dated further back than the first kings of the 18th dynasty; from that time, however, there can be no doubt that it was currently used, not only in Egypt, but also in Ethiopia and Assyria.

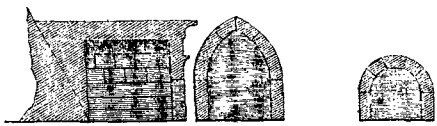
192. Arch of the Cloaca Maxima, Rome. Scale 50 ft. to 1 in.

It would, indeed, be more difficult to account for the fact of such perfect builders as the Egyptians being ignorant of the arch if such were the case; though, at the same time, it is easy to understand why they should use it so sparingly as they did in their monumental erections.

Even in the simplest arch, that formed of only two stones, such as is frequently found in the pyramids, and over the highest chamber, woodcut No. 157, it will be evident that any weight placed on the apex has a tendency to lower the summit, and press the lower ends of the

stones outwards. Where there was the whole mass of the pyramid to abut against, this was of no consequence, but in a slighter building it would have thrust the walls apart, and brought on inevitable ruin.

The introduction of a third stone, as in the arch, woodcut No. 190, hardly remedied this at all, the central stone acting like a wedge to thrust the 2 others apart; and even the introduction of 2 more stones, making 5, as in woodcut No. 193, only distributed the pressure without remedying the defect; and without the most perfect masonry every additional joint was only an additional source of weakness.



193. Arches in the Pyramids at Meroë. From Hoskins.

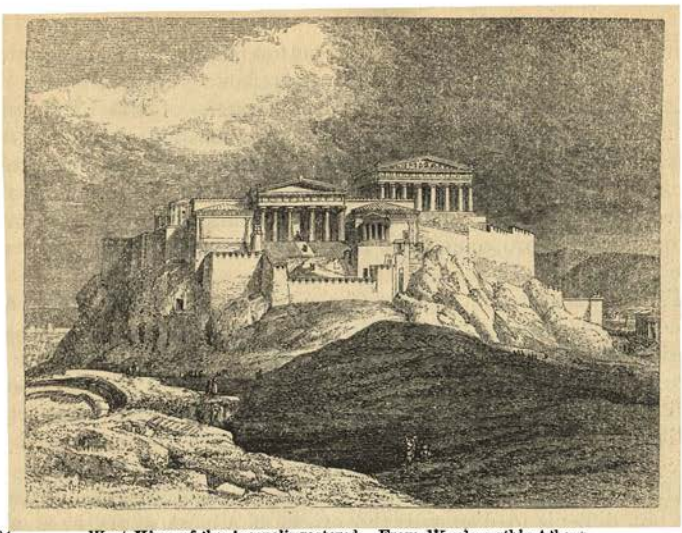
This has been felt by the architects of all ages and in all countries: still the advantage of being able to cover large spaces with small stones or bricks is so great, that many have been willing to run the risk; and all the ingenuity of the Gothic architects of the middle ages was applied to overcoming the difficulty. But even the best of their buildings are unstable from this cause, and require constant care and attention to keep them from falling.

The Indian architects have fallen into the other extreme, refusing to use the arch under any circumstances, and preferring the smallest dimensions and the most crowded interiors, rather than adopt what they consider so destructive an expedient.

The Egyptians seem to have followed a middle course, using arches either in tombs, where the rock formed an immoveable abutment; or in pyramids and buildings where the mass immensely overpowered the thrust; or underground, where the superincumbent earth prevented movement.

They seem also to have used flat segmental arches, of brickwork, between the rows of massive architraves which they placed on their pillars; and as all these abutted one another, like the arches of a bridge, except the external ones, which were sufficiently supported by the massive walls, the mode of construction was a sound one. This is exactly that which we have re-invented during the last 30 years, in consequence of the introduction of cast-iron beams, between which flat segmental arches of brick are thrown, when we wish to introduce a more solid and fire-proof construction than is possible with wood only.

In their use of the arch, as in everything else, the building science of the Egyptians seems to have been governed by the soundest principles and the most perfect knowledge of what was judicious and expedient, and what should be avoided. Many of their smaller edifices have no doubt perished from the scarcity of wood forcing the builders to employ brick arches, but they wisely avoided the use of these in all their larger monuments—in all, in fact, which they wished should endure to the latest posterity.



194. West View of the Acropolis restored. From Wordsworth's Athens.

BOOK VI.

CHAPTER I.

GREECE.

CONTENTS.

Historical notice — Pelasgic art — Tomb of Atreus — Other remains — Hellenic Greece — History of the orders — Doric order — The Parthenon — Ionic order — Corinthian order — Caryatides — Forms of temples — Mode of lighting — Municipal architecture — Theatres.

CHRONOLOGY.

	DATES.
Atridæ at Mycenæ, from	B.C. 1207 to 1104
Return of the Heraclidæ to Peloponnese	1104
Olympiads commence	776
Cypselidæ at Corinth — Building of temple at Corinth, from	655 to 581
Selinus founded, and first temple commenced	626
Ascendancy of Ægina — Building of temple at Ægina, from	508 to 499
Battle of Marathon	490
Battle of Salamis	B.C. 480
Theron at Agrigentum. Commences great temple	480
Cimon at Athens. Temple of Theseus built	469
Pericles at Athens. Parthenon finished	438
Temple of Jupiter at Olympia finished	436
Propylæa at Athens built, from	437 to 432
Selinus destroyed by Carthaginians	410
Erechtheium at Athens finished	409
Monument of Lysicrates at Athens	335
Death of Alexander the Great	324

TILL within a very recent period the histories of Greece and Rome have been considered as the ancient histories of the world; and even now, in our universities and public schools, it is scarcely acknowledged that

a more ancient record has been read on the monuments of Egypt, and dug out of the bowels of the earth in Assyria.

It is nevertheless true that the decipherment of the hieroglyphics on the one hand, and the reading of the arrow-headed characters on the other, have disclosed to us two forms of civilisation anterior to that which reappeared in Greece in the 8th century before Christ. Based on those that preceded, it developed itself there with a degree of perfection never before seen, and in its own peculiar department never since surpassed.

These discoveries have been of the utmost importance, not only in correcting our hitherto narrow views of ancient history, but also as explaining much that was obscure, or utterly unintelligible, in those histories with which we were more immediately familiar. We now, for the first time, comprehend whence the Greeks obtained their arts and civilisation, and how far the character of these was affected by the sources from which they were derived.

Having already described the artistic forms of Egypt and Assyria, it is not difficult to discover the origin of almost every idea, and of every architectural feature, that afterwards was found in Greece. To comprehend her arts, it is necessary to bear in mind that Greece was inhabited by two distinct and separate races, the one aboriginal, as far as we know, which, for distinction's sake, may be called Pelasgic, a race which not only spread over Greece, but Etruria and Asia Minor, and before the war of Troy was generally the dominant race in all these countries. In Greece their power became extinct with the return of the Heraclidæ to the Peloponnese in the 11th century B.C. In Etruria they retained their supremacy till dispossessed by the Romans; and in Asia they never were, strictly speaking, superseded, though under Grecian influence their civilisation took a form widely different from what we find in the earlier ages.

The other, or Dorian race, may have existed in Greece from the earliest ages, but only superseded the Pelasgi politically about 10 centuries before Christ; but their civilisation took no new artistic form for at least 3 centuries afterwards, at which time what we know as the true Grecian form of art first made its appearance.

Architecturally these two races may be distinguished, the one as an Ionic, the other as a Doric race. We may feel sure that the Pelasgic race prevailed wherever the Ionic order is found; and the Doric order, in like manner, marks the exact degree of prevalence of the other race in the places where it exists.

Sparta may be considered as the head-quarters of the Doric, Arcadia of the Ionic races. In Athens they seem to have been nearly equally mixed, and in other states in varying proportions.

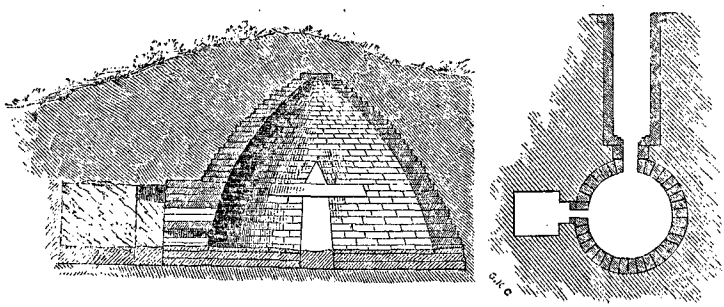
As in all countries and in all ages down to the present day, the Doric race, which was identical with, or at least closely allied to, the Teutonic, seems to have been far better adapted for the arts of war and self-government than for the softer arts of poetry and peace. The Pelasgi, on the other hand, as connected with the Celtic or Tartar races, seem to have had a peculiar facility in elaborating beauty, the

nicest perception of poetic elegance, and the justest appreciation of all that constitutes true artistic beauty of form and colour.

Thus the poetry of Arcadia was unknown in the neighbouring state of Sparta; but the Doric race there remained true to their institutions, and spread their colonies and their power further than any other of the little principalities of Greece. The institutions of Lycurgus could never have been maintained in Athens; but, on the other hand, the Parthenon was as impossible in the Lacedemonian state. Even in Athens art would not have been what it was without that happy admixture of the two races, mingling the common sense of the one with the artistic feeling of the other, so as to produce the most brilliant intellectual development which has yet dazzled the world with its splendour.

PELASGIC ART.

As might be supposed, from the length of time that has elapsed since the Pelasgic races held rule in Greece, and the numerous changes that have taken place in that country since their day, their architectural remains are few, and comparatively insignificant. Another cause that has contributed to this is, that, like the Assyrian and other cognate Asiatic races, they were not temple-builders. Places of worship they of course had, but slight and ephemeral as compared with those of their successors. From what we read in Homer, and should guess from their affinities, their palaces and dwellings, though remarkable for their extent and luxuriousness, were principally composed of wood, which has perished, and of metal, which afforded too tempting a bait to the plunderer to be allowed long to remain where it was. It thus came to pass that, if it were not for their tombs, their city walls, and their works of civil engineering, such as bridges and tunnels—in which they were pre-eminent—we should hardly now possess any material remains to prove their existence, or mark the degree of civilisation to which they had reached.

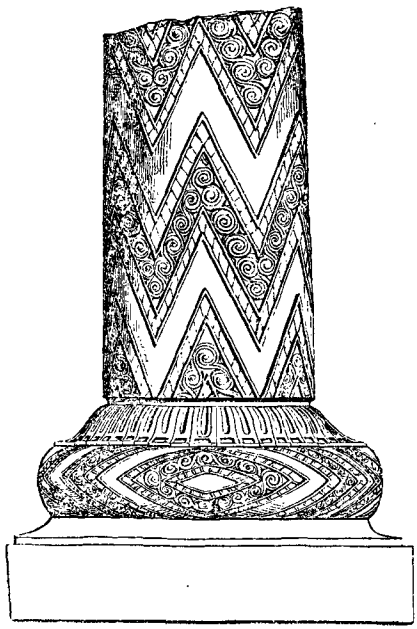


195. Section and Plan of Tomb of Atreus at Mycenæ. Scale of section 50 ft. to 1 in.; plan 100 ft. to 1 in.

The most remarkable of these remains are the tombs of the kings of Mycenæ. The Dorians described these as treasuries, as they looked upon such halls as far more than sufficient for the narrow dwelling

of the tomb. The most perfect and the largest of them now existing is known as the treasury or tomb of Atreus at Mycenæ, drawn to the usual scales in plan and section in the annexed woodcut. The principal chamber is 48 ft. 6 in. in diameter, and is, or was when perfect, of the shape of a regular equilateral pointed arch, a form well adapted to the mode of construction, which is that of horizontal layers of stones, projecting the one beyond the other, till one small stone closed the whole, and made the vault complete.

As before explained (page 73 *et seqq.*), this was the form of dome afterwards adopted by the Jaina architects in India, and it prevailed wherever a Pelasgic race is found, down to the time when the pointed form again came into use in the middle ages, though it was not then used as a horizontal, but as a radiating arch.



196. Base of Pillar in front of Tomb of Atreus at Mycenæ.

On one side of this hall is a chamber cut in the rock, the true sepulchre apparently, and externally is a long passage leading to a doorway, which, judging from the fragment that remains (woodcut No. 196), must have been of a purely Asiatic form of art, and very unlike anything found after this age in Greece.

Internally the dome was apparently lined with plates of brass or bronze, some nails of which are now found there; and the holes in which the nails were inserted are still to be seen all over the place. Another of these tombs, erected by Minyus at Orchomenos, seems to have been, from the description of Pausanias, at least 20 ft. wider than this one, and proportionably larger in every respect. All these were covered with earth, and many are now probably hidden which a diligent search might disclose. It is hardly, however, to be hoped that an unrifled tomb may be discovered in Greece, though numerous examples are found in Etruria. The very name of treasury must have excited the cupidity of the Greeks; and as their real destination was forgotten, no lingering respect for the dead could have held back the hand of the spoiler.

As domes constructed on the horizontal principle, these two are the largest of which we have any knowledge, though there does not seem to be any reasonable limit to the extent to which such a form of building might be carried. When backed by earth, as

these were, it is evident, from the mode of construction, that they cannot be destroyed by any equable pressure exerted from the exterior.

The only danger to be feared is, what is technically called, a rising of the haunches; and to avoid this it would be necessary, where large domes were attempted, to adopt a form more nearly conical than that used at Mycenæ. This might be a less pleasing architectural feature, but it is constructively a far better one than the form of the radiating domes we generally employ.

It is certainly to be regretted that more of the decorative features of this early style have not been discovered. They differ so entirely from anything else in Greece, and are so purely Asiatic in form, that it would be exceedingly curious to be able to restore a complete decoration of any sort. In all the parts hitherto brought to light, an Ionic-like scroll is repeated in every part and over every detail, rather rudely executed, but probably originally heightened by colour. Its counterparts are found in Assyria and at Persepolis, but nowhere else in Greece.

The Pelasgic races soon learnt to adopt for their doorways the more pleasing curvilinear form, with which they were already familiar from their interiors. The annexed illustration (woodcut No. 197) from a gateway at Thoricus, in Attica, serves to show its simplest and earliest form; and the next, from Assos, in Asia Minor, of a far more modern date, shows the most complicated form it took in ancient times. In this last instance it is merely a discharging arch, and so little fitted for the purpose to which it is applied, that we can only suppose that its adoption arose from a strong predilection in favour of this shape.

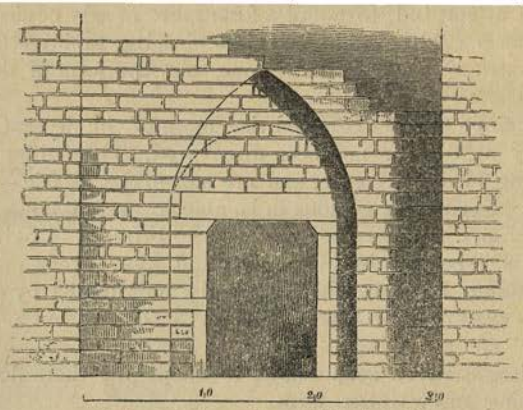
197. Gateway at Thoricus. From Dodwell's Greece.

Another illustration of Pelasgic masonry is found at Delos (woodcut No. 199), consisting of a roof formed by two arch stones, at a certain angle to one another, as in Egypt, and is further interesting as being associated with capitals of pillars formed of the front part of bulls, as in Assyria, pointing again to the intimate connexion that existed between Greece and Asia at this early period of her history.

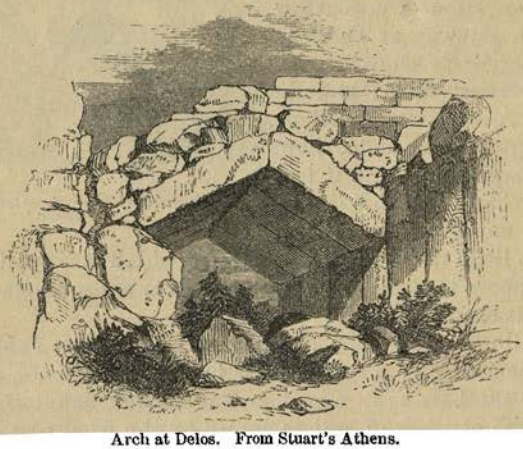
In all these instances it does not seem to have been so much want of knowledge that led these early builders to adopt the horizontal in preference to the radiating principle, but a conviction of its greater durability, and also, perhaps, a certain predilection for an ancient mode.

In the construction of these walls they adhered, as a mere matter of taste, to forms which they must have known to be inferior to others. In the example, for instance, of a wall in the Peloponnesus (woodcut No. 200), we find the polygonal masonry of an earlier age actually

placed upon as perfect a specimen, built in regular courses, or what is technically called *ashlar* work, as any to be found in Greece; and on the other side of the gateway at Assos (woodcut No. 198) there exists a semicircular arch, shown by the dotted line. It is constructed horizontally, and could only have been copied from a radiating arch.



198. Gateway at Assos. From Texier's Asie Mineure.

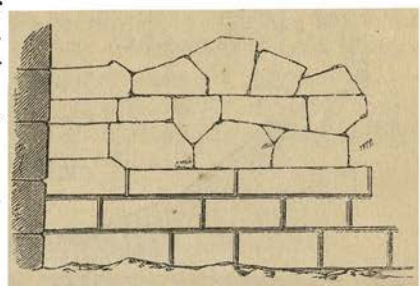


199. Arch at Delos. From Stuart's Athens.

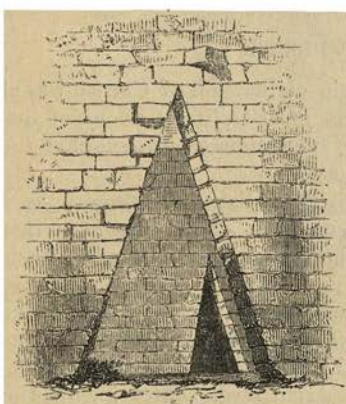
Their city walls are chiefly remarkable for the size of the blocks of stone, and for the beauty with which their irregular joints and courses are fitted into one another. Like most fortifications, they are generally devoid of ornament, the only architectural features being the openings. These are interesting, as showing the steps by which a peculiar form of masonry was perfected, which, in after ages, led to important architectural results.

One of the most primitive of these buildings is a nameless ruin existing near Missolonghi (woodcut No. 201). In it the sides of the opening are straight for the whole height, and, though making a very

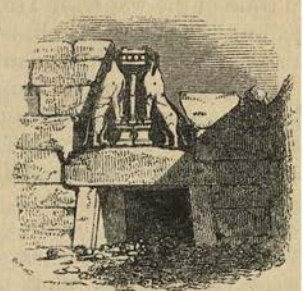
stable form of opening, it is one to which it is extremely difficult to fit doors, or to close by any known means. It is this that led to the next expedient of inserting a lintel at a certain height, and making the jambs more perpendicular below, and more sloping above. This method is already exemplified in the tomb of Atreus (woodcut No. 195), and in the gate of the Lions at Mycenæ (woodcut No. 202). It is by no means clear whether the pediments were always filled up with sculpture, as in this instance, or left open. In the walls of a town it probably was always closed, in that of a chamber left open. In the gate at Mycenæ the two lions stand against an altar,[1] shaped like a pillar of a form found in Lycia, in which the round ends of the timbers of the roof are shown as if projecting into the frieze.



200. Wall in Peloponnesus. From Blouet's Voyage en Grèce.

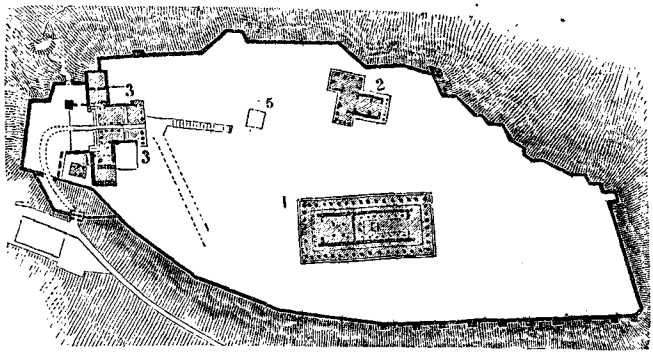


201. Doorway at Missolonghi.



202. Gate of Lions, Mycenæ.

[1] It is to be regretted that no cast has ever been taken of these, the oldest sculptures of their class in existence. The drawings hitherto made of them are so inexact that it is impossible to reason on them, whilst as types of a style they are the most interesting known to exist anywhere.



203. Plan of the Acropolis at Athens.

CHAPTER II.

HELLENIC GREECE.

HISTORY OF THE ORDERS.

THE culminating period of the Pelasgic civilisation of Greece was at the time of the war with Troy—the last great military event of this age, and the one which closed the long and intimate connexion of the Pelasgians with their cognate races in Asia.

Sixty years later the irruption of the Thessalians, and twenty years after that event the return of the Heracleidæ, closed for ever that chapter in history, and gave rise to the Dorian civilisation, which is the great and true glory of Greece.

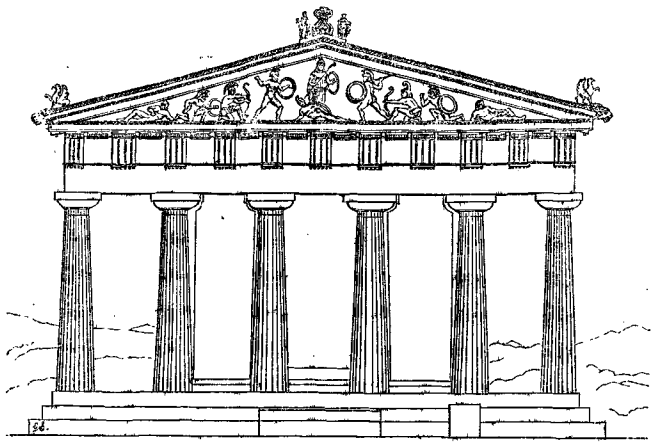
Four centuries, however, elapsed, which may be truly called the dark ages of Greece, before the new seed bore fruit, at least as far as art is concerned. These ages produced, it is true, the laws of Lycurgus, a characteristic effort of a truly Arian race, conferring on the people who invented them that power of self-government, and capability for republican institutions, which gave them such stability at home and such power abroad, but which were as inimical to the softer glories of the fine arts in Sparta as they have proved elsewhere.

When, after this long night, art reappeared, it was at Corinth, under the Cypselidæ, a race of strongly marked Asiatic tendencies; but the art had then undergone such a transformation as almost to startle us. It is no longer the elegant and ornate forms of Mycenæ, and the cognate Asiatic art, but the rude, bold proportions of Egyptian art, and with almost more than Egyptian massiveness.

The age of the Doric temple at Corinth is not, it is true, satisfactorily determined; but the balance of evidence would lead us to believe that it belongs to the age of Cypselus, or about 650 B.C. The pillars are less than 4 diameters in height, and the architrave—the

only part of the superstructure that now remains—is proportionately heavy. It is, indeed, one of the most massive specimens of architecture existing, more so than even its rock-cut prototype at Beni-Hassan, from which it is most indubitably copied. As a work of art, it fails from excess of strength, a fault common to most of the efforts of a rude people, ignorant of their own resources, and striving, by the expression of physical strength alone, to obtain all the objects of their art.

Next in age to this is the temple at Ægina. Its date, too, is unknown, though, judging from the character of its sculpture, it probably belongs to the middle of the sixth century before Christ.



204. Temple at Ægina restored. No scale.

We know that Athens had a great temple on the Acropolis, contemporary with these, and the frusta of its columns still remain, which, after its destruction by the Persians, were built into the walls of the citadel. It is more than probable that all the principal cities of Greece had temples commensurate with their dignity before the Persian war. Many of these were destroyed during that struggle; but it also happened then, as in France and England in the 12th and 13th centuries, that the old temples were thought unworthy of the national greatness, and of that feeling of exaltation arising from the successful result of the greatest of their wars, so that almost all those which remained were pulled down or rebuilt. The consequence is, that nearly all the great temples now found in Greece were built in the 40 or 50 years that succeeded the defeat of the Persians at Salamis and Platæa.

The oldest temple of this class is that best known as the Theseium, or temple of Theseus, at Athens, though by some believed to be more properly that of the god Mars. It constitutes a link between the archaic and the perfect age of Grecian art, more perfect than the temple at Ægina or any that preceded it, but falling short of the perfection of the Parthenon, its near neighbour both in locality and date.

Of all the great temples, the best and most celebrated is the Parthenon, the only octastyle Doric temple in Greece, and in its own class undoubtedly the most beautiful building in the world. It is true it

has neither the dimensions nor the wondrous expression of power and eternity inherent in Egyptian temples, nor has it the variety and poetry of the Gothic cathedral; but for intellectual beauty, for perfection of proportion, for beauty of detail, and for the exquisite perception of the highest and most recondite principles of art ever applied to architecture, it stands utterly and entirely alone and unrivalled—the glory of Greece, and the shame of the rest of the world.

Next in size and in beauty to this was the great hexastyle temple of Jupiter at Olympia, finished two years later than the Parthenon. Its dimensions were nearly the same, but, having only 6 pillars in front instead of 8, as in the Parthenon, the proportions were different, this temple being 95 ft. by 230, the Parthenon 101 ft. by 227.

To the same age belongs the exquisite little temple of Apollo Epicurius at Bassæ (47 ft. by 125), the temple of Minerva at Sunium, the greater temple at Rhamnus, the Propylæa at Athens, and indeed all that is greatest and most beautiful in the architecture of Greece. The temple of Ceres at Eleusis also was founded and designed at this period, but its execution belongs to a later date.

Sicily.

Owing, probably, to some local peculiarity, which we have not now the means of explaining, the Dorian colonies of Sicily and Magna Græcia seem to have possessed, in the days of their prosperity, a greater number of temples, and certainly retain the traces of many more, than were or are to be found in any of the great cities of the mother country. The one city of Selinus alone possesses 6 in two groups, 3 in the citadel, and 3 in the city. Of these the oldest is the central one of the first-named group. Its sculptures, first discovered by Messrs. Angell and Harris, indicate an age only slightly subsequent to the foundation of the colony, B.C. 636, and therefore probably nearly contemporary with the example above mentioned at Corinth. The most modern is the great octastyle temple, which seems to have been left unfinished at the time of the destruction of the city by the Carthaginians, B.C. 410. The remaining 4 range between these dates, and therefore form a tolerably perfect chronometric series at that time when the arts of Greece itself fail us. The inferiority, however, of provincial art, as compared with that of Greece itself, prevents us from applying such a test with too much confidence to the real history of the art, though it is undoubtedly valuable as a secondary illustration.

At Agrigentum there are 3 Doric temples, 2 small hexastyles, whose age may be about 500 to 480 B.C., and one great exceptional example, the largest of all the Grecian temples of the age, being 360 ft. long by 173 broad. These gigantic dimensions, however, were beyond the legitimate powers or proportions of the order employed; and the architect was consequently forced to adopt expedients which must always have rendered it a clumsy though a magnificent building. Its date is perfectly known, as it was commenced by Theron, B.C. 480, and left unfinished seventy-five years afterwards, when the city was destroyed by the Carthaginians.

At Syracuse there still exist the ruins of a very beautiful temple of this age; and at Egesta are remains of another in a much more perfect state.

Pæstum, in Magna Græcia, boasts of the most magnificent group of temples after that at Agrigentum. One is a very beautiful hexastyle, belonging probably to the middle of the fifth century B.C., built in a bold and very pure style of Doric architecture, and still retains the greater part of its internal columnar arrangement.

The other two are more modern, and far less pure either in plan or in detail, one having nine columns at each end, the central pillar being meant to correspond with an internal range of pillars, supporting the ridge of the roof. The other, though of a regular form, is so modified by local peculiarities, so corrupt in fact, as hardly to deserve being ranked with the beautiful order which it most resembles.

IONIC.

We have even fewer materials for the history of the Ionic order in Greece than we have for that of the Doric. The recent discoveries in Assyria have proved, beyond a shadow of a doubt, that the Ionic was even more essentially an introduction from Asia than the Doric was from Egypt: the only question is, when it was brought into Greece. My own impression is, that it existed there in one form or another from the earliest ages, but, owing to its slenderer proportions, and the greater quantity of wood used in its construction, the examples may have perished, so that nothing is now known to exist which can claim even as great an antiquity as the Persian war.

The oldest example, probably, was the temple on the Ilissus, now destroyed, dating from about 484 B.C.; next the little gem of a temple dedicated to Nikè Apteros, or the Wingless Victory, about 15 years later, in front of the Propylæa at Athens. The last and most perfect of all the examples of this order is the Erechtheium, on the Acropolis: its date is apparently about 420 B.C., the great epoch of Athenian art. Nowhere did the exquisite taste and skill of the Athenians show themselves to greater advantage than here; for though every detail of the order may be traced back to Nineveh or Persepolis, all are so purified, so imbued with purely Grecian taste and feeling, that they have become essential parts of a far more beautiful order than ever existed in their native country.

The largest, and perhaps the finest, of Grecian Ionic temples, was that built about a century afterwards, at Tegea, in Arcadia—a regular peripteral temple, of considerable dimensions, but whose existence is now known only from the description of Pausanias.

As in the case, however, of the Doric order, it is not in Greece itself that we find either the greatest number of temples of this order, or those most remarkable for size, but in the colonies in Asia Minor, and more especially in Ionia, whence the order most properly takes its name.

That an Ionic order existed in Asia Minor before the Persian wars is quite certain, but all examples perished in that memorable

struggle; and when it reappeared after it, the order had lost much of its purely Asiatic character, and assumed certain forms and tendencies borrowed from the simpler and purer Doric style.

If any temple in the Asiatic Greek colonies escaped destruction in the Persian wars, it was that of Juno at Samos. It is said to have been built by Polycrates, and appears to have been of the Doric order. The ruins now found there are of the Ionic order, 346 ft. by 189 ft., and which must have succeeded the first mentioned. The apparent archaisms in the form of the bases, &c., which have misled antiquarians, are merely Eastern forms retained in spite of Grecian influence.

More remarkable even than this was the celebrated temple of Diana at Ephesus, 425 ft. long by 220 ft. wide, consequently covering 93,500 ft., or a larger area than any ancient temple known out of Egypt, or any mediæval cathedral, except Milan, which is slightly larger. Even its site, however, is now a matter of dispute.

Besides these, there was a splendid decastyle temple, dedicated to Apollo Didymæus, at Miletus, 165 ft. wide by 302 ft. in length; an octastyle at Sardis, 261 ft. by 144 ft.; an exquisitely beautiful, though small hexastyle, at Priene, 122 ft. by 64 ft.; and another at Teos, besides smaller examples elsewhere, and many which have no doubt perished.

Corinthian.

The Corinthian order is as essentially borrowed from the bell-shaped capitals of Egypt, as the Doric is from their oldest pillars. Like everything they touched, the Greeks soon rendered it their own, by the freedom and elegance with which they treated it. The acanthus-leaf with which they adorned it is essentially Grecian, and we must suppose that it had been used by them as an ornament, either in their metal or wood work, long before they adopted it in stone as an architectural feature.

As in everything else, however, the Greeks could not help betraying in this also the Asiatic origin of their art, and the Egyptian order with them was soon wedded to the Ionic, whose volutes became an essential, though subdued part of this order. It is in fact a composite order, made up of the bell-shaped capitals of the Egyptians and the spiral of the Assyrians, and adopted by the Greeks at a time when national distinctions were rapidly disappearing, and when true and severer art was giving place to love of variety. At that time also mere ornament and carving were supplanting the purer class of form and the higher aspirations of sculpture with which the Greeks ornamented their temples in their best days.

In Greece the order does not appear to have been introduced, or at least generally used, before the age of Alexander the Great; the oldest authentic example, and also one of the most beautiful, being the Choragic Monument of Lysicrates (B.C. 335), which, notwithstanding the smallness of its dimensions, is one of the most beautiful works of art of the merely ornamental class to be found in any part of the world. A simpler example, but by no means so beautiful, is that of the small porticos of the building commonly but improperly called the

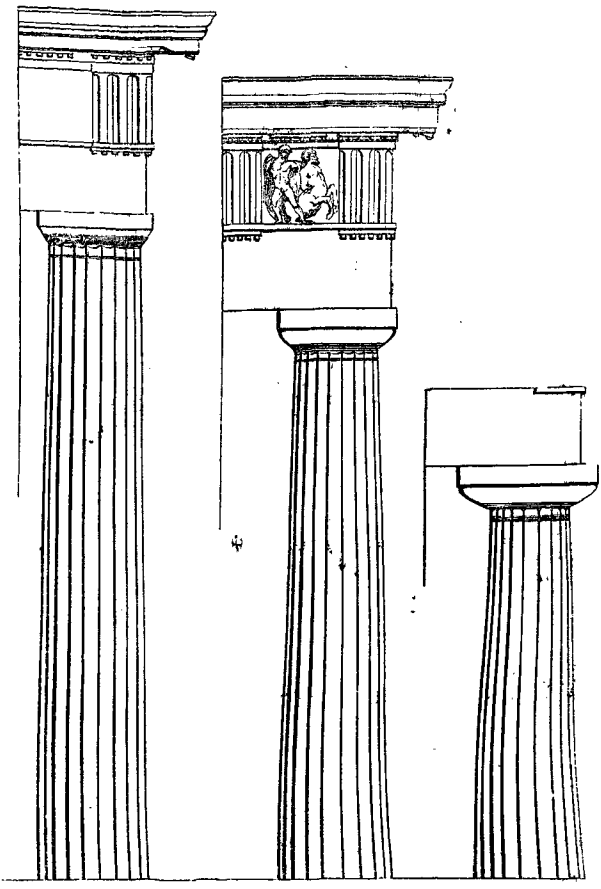
Tower of the Winds at Athens. The largest example in Greece of the Corinthian order is the temple of Jupiter Olympius at Athens. This, however, may almost be called a Roman building, though on Grecian soil—having been commenced in its present form under Antiochus Epiphanes, in the 2nd century B.C., by the Roman architect Cossutius, and only finished by Hadrian, to whom probably we may ascribe the greatest part of what now remains. Its dimensions are 171 ft. by 354 ft., or nearly those of the interior of the great Hypostyle Hall at Karnac; and from the number of its columns, their size and their beauty, it may be considered as the most beautiful Corinthian temple of the ancient world.

Judging, however, from some fragments found among the Ionic temples of Asia Minor, it appears that the Corinthian order was introduced there before we find any trace of it in Greece Proper. Indeed, *à priori* we might expect that its introduction into Greece was a part of that reaction which the elegant and luxurious Asiatics exercised on the severer and more manly inhabitants of European Greece, and which was in fact the main cause of their subjection, first to the Macedonians, and finally beneath the iron yoke of Rome. As used by the Asiatics, it seems to have arisen from the introduction of the bell-shaped capital of the Egyptians, to which they applied the acanthus-leaf, sometimes in conjunction with the honeysuckle ornament of the time, as in woodcut No. 205, and on other and later occasions together with the volutes of the same order, the latter combination being the one which ultimately prevailed, and became the typical form of the Corinthian capital.

205. Ancient Corinthian Capital. From Branchidæ.

DORIC ORDER.

The Doric was the order which the Greeks especially loved and cultivated so as to make it most exclusively their own; and, as used in the Parthenon, it certainly is as complete and as perfect an architectural feature as any style can boast of. When first introduced from Egypt, it, as before stated, partook of even more than Egyptian solidity, but by degrees became attenuated to the weak and lean form of the Roman order of the same name. Woodcut No. 206 illustrates the three stages of progress from the oldest example at Corinth to the order as used in the time of Philip at Delos, the intermediate being the culminating point in the age of Pericles: the first is 4·47 diameters in height, the next 6·025, the last 7·015; and if the table were filled up with all the other examples, the gradual attenuation of the shaft would very nearly give the relative date of the example. This fact is in itself sufficient to refute the idea of the pillar being copied from a



206. Temple at Delos. Parthenon at Athens. Temple at Corinth.

wooden post, as in that case it would have been slenderer at first, and would gradually have departed from the wooden form as the style advanced. This is the case in all primitive styles. With the Doric order the contrary is the case. The earlier the example the more unlike it is to any wooden original. As the masons advanced in skill and power over their stone material, it came more and more to resemble posts or pillars of wood. The fact appears to be, that either in Egypt or in early Greece the pillar was originally a pier of brickwork, or of rubble masonry, supporting a wooden roof, of which the architraves, the triglyphs, and the various parts of the cornice, all bore traces down to the later period.

Even as ordinarily represented, or as copied in this country, there is a degree of solidity combined with elegance in this order, and an exquisite proportion of the parts to one another, and to the work they have to perform, that command the admiration of every person of taste; but, as used in Greece, its beauty was very much enhanced by a

number of refinements, whose existence was not suspected till lately, and even now cannot be detected but by the most practised eye.

The columns were at first assumed to be bounded by straight lines. It is now found that they have an *entasis*, or convex profile, in the Parthenon to the extent of $\frac{1}{3\,3\,0}$ of the whole height, and are bounded by a very delicate hyperbolic curve; it is true this can hardly be detected by the eye in ordinary positions, but the want of it gives that rigidity and poverty to the column which is observable in modern examples.[1]

In like manner, the architrave in all temples was carried upwards, so as to form a very flat arch, just sufficient to correct the optical delusion arising from the interference of the sloping lines of the pediment. This, I believe, was common to all temples, but in the Parthenon the curve was applied to the sides also, though from what motive it is not so easy to detect.

Another refinement was making all the columns slope slightly inwards, so as to give an idea of strength and support to the whole. Add to this, that all the curved lines used were either hyperbolas or parabolas. With one exception only, no circular line was employed, nor even an ellipse. Every part of the temple was also arranged with the most unbounded care and accuracy, and every detail of the masonry was carried out with a precision and beauty of execution which is almost unrivalled, and it may be added that the material of the whole was the purest and best white marble. All these delicate adjustments, this exquisite finish and attention to even the smallest details, are well bestowed on a design in itself simple, beautiful, and appropriate. They combine to render this order, as found in the best Greek temples, as nearly faultless as any work of art can possibly be, and such as we may dwell upon with the most unmixed and unvarying satisfaction.

To understand, however, the Doric order, we must not regard it as a merely masonic form. Sculpture was always used, or intended to be used, with it. The metopes between the triglyphs, the pediments of the porticos, and the acroteria or pedestals on the roof, are all unmeaning and useless unless filled or surmounted with sculptured figures. Sculpture is, indeed, as essential a part of this order as the acanthus-leaves and ornaments of the cornice are to the capitals and entablature of the Corinthian order; and without it, or without its place being supplied by painting, we are merely looking at the dead

207. The Parthenon. Scale 50 ft. to 1 in.

[1] These facts have all been fully elucidated by Mr. Penrose in his beautiful work containing the results of his researches on the Parthenon and other temples of Greece, published by the Dilettanti Society.

skeleton, the mere framework of the order, without the flesh and blood that gave it life and purpose.

It is when all these parts are combined together, as in the portico of the Parthenon (woodcut No. 207), that we can understand this order in all its perfection; for though each part was beautiful in itself, their full value can be appreciated only as parts of a great whole.

Another essential part of the order, too often overlooked, is the colour, which was as integral a part of it as its form. Till very lately, it was denied that Greek temples were, or could be, painted: the unmistakeable remains of it, however, that have been discovered in almost all temples, and the greater knowledge of the value and use of colour which now prevails, have altered the public opinion very much on the matter, and most people admit that some colour was used, though few are agreed as to the extent to which it was carried.

It cannot now be questioned that colour was used everywhere internally, and on every object. Externally too it is generally admitted that the sculpture was painted and relieved by strongly coloured backgrounds; the lacunaria, or recesses of the roof, were also certainly painted, and all the architectural mouldings, which at a later period were carved in relief, have been found to retain traces of their painted ornaments.

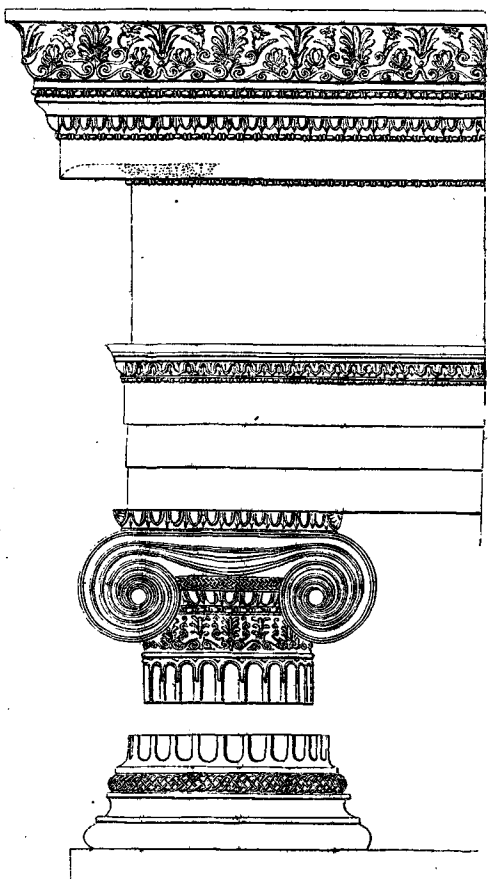
It is disputed whether the echinus or curved moulding of the capital was so ornamented. I think it undoubtedly was; and the walls of the cells were also coloured throughout and covered with paintings illustrative of the legends and attributes of the divinity to whom the temple was dedicated, or of the purposes for which it was erected. The plane face of the architrave, I believe, was left white, or merely ornamented with metal shields or inscriptions, and the shafts of the columns seem also to have been left plain, or merely slightly stained to tone down the crudeness of the white marble. Generally speaking, all those parts which from their form or position were in any degree protected from the rain or atmospheric influences seem to have been coloured; those particularly exposed, to have been left plain. To whatever extent, however, it may have been carried, these coloured ornaments were as essential a part of the Doric order as the carved ornaments were of the Corinthian, and made it, when perfect, a richer and more ornamental, as it was a more solid and stable, order than the latter. The colour nowhere interfered with the beauty of its forms, but gave it that richness and amount of ornamentation which is indispensable in all except the most colossal buildings, and a most valuable adjunct even to them.

Ionic.

The Ionic order, as we now find it, is not without some decided advantages over the Doric. It is more complete in itself and less dependent on sculpture. Its frieze was too small for much display of human life and action, and was probably usually ornamented with lines of animals[1] like the friezes at Persepolis. But the frieze of the little

[1] It was called Zoophorus (*life* or *figure bearer*).

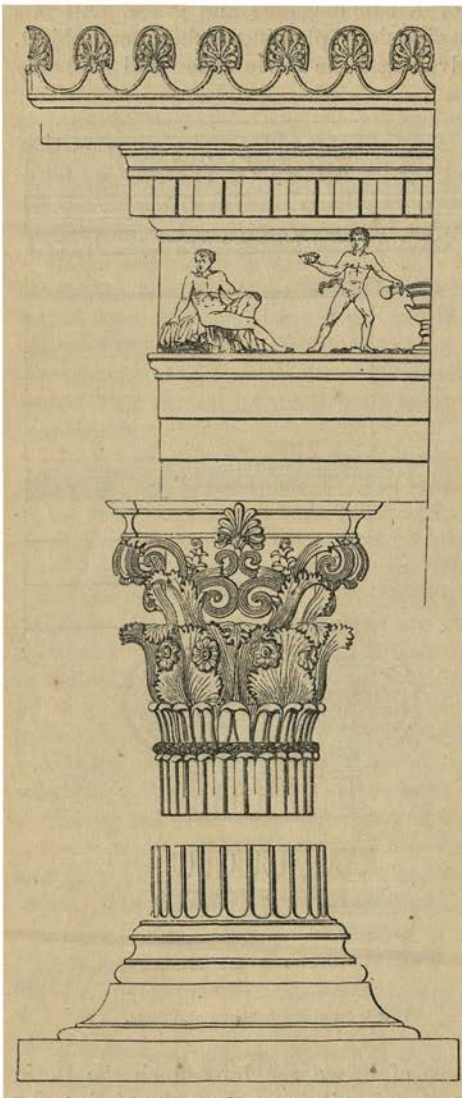
temple of Nikè Apteros is brilliantly ornamented in the same style as those of the Doric order. It also happened that those details and ornaments which were only painted in the Doric, are carved in the Ionic order, and remain therefore visible to the present day, which gives to this order a completeness in our eyes which the other cannot boast of. Add to this a certain degree of Asiatic elegance and grace. All this when put together makes up a singularly pleasing architectural object. But notwithstanding these advantages the Doric order will probably always be admitted to be superior, as belonging to a higher class of art, and because all its forms and details are better and more adapted to their purpose than these are.



208. Ionic order of Erechtheium at Athens.

The principal characteristic of the Ionic order is the Pelasgic or Asiatic spiral, here called a volute, which, notwithstanding its elegance, forms at best but an awkward capital. The Assyrian honeysuckle below this, carved as it is with the exquisite feeling and taste which a Greek only knew how to impart to such an object, forms as elegant an architectural detail as is anywhere to be found; and whether used as the necking of a column, or on the crowning member of a cornice, or on other parts connected with the order, is everywhere the most beautiful ornament connected with it. Comparing this order with that at Persepolis (woodcut No. 140), the only truly Asiatic prototype we have of it, we see how much the Doric feeling of the Greeks had done to sober it down, by abbreviating the capital and omitting the greater part of the base. This process was carried much farther when the order was used in conjunction with the Doric, as in the Propylæa, than when used by itself, as in the Erechtheium; still in every case all the parts found in the Asiatic style are

found in the Greek. The same form and feelings pervade both; and, except in beauty of execution and detail, it is not quite clear how far even the Greek order is an improvement on the Eastern one. The Persepolitan base is certainly the more beautiful of the two; so are many parts of the capital. The perfection of the whole, however, depends on the mode in which it was employed; and it is perfectly evident that the Persian order could not be combined with the Doric, nor applied with much propriety as an external order, which was the essential use of all the Grecian forms of pillars.



209. Order of the Choragic Monument of Lysicrates.

Notwithstanding the amount of carving which the Ionic order displays, there can be little doubt but that it was also ornamented with colour to a considerable extent, but probably in a different manner from the Doric. My own impression is, that the carved parts were gilt, or picked out with gold, relieved by coloured grounds, varied according to the situation in which they were found. The existing remains prove that colours were used in juxtaposition to relieve and heighten the architectural effect of the carved ornaments of this order.

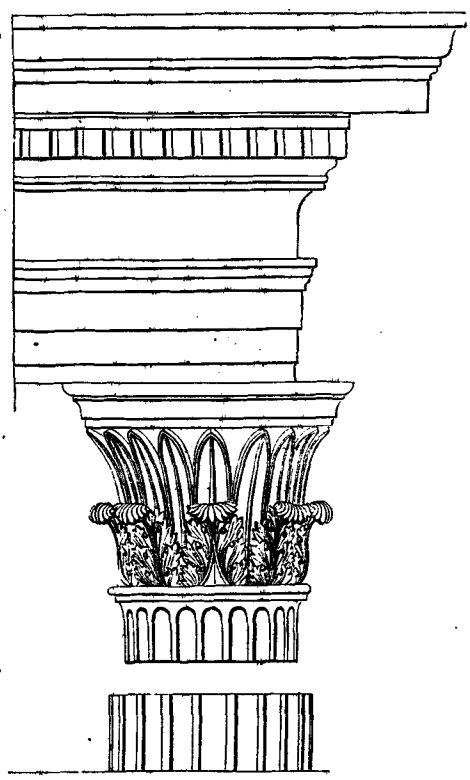
In the Ionic temples at Athens the same exquisite masonry was used as in the Doric; the same mathematical precision and care is bestowed on the entasis of the columns, the drawing of the volutes, and the execution of even the minutest details; and much of its beauty and effect are no doubt owing to this circumstance, which we miss so painfully in nearly all modern examples.

CORINTHIAN.

As before mentioned, the Corinthian order was only introduced into Greece in the decline of art, and never rose during the purely Grecian age to the dignity of a temple order. It most probably, however, was used in the more ornate specimens of domestic architecture, and in smaller works of art, long before any of those examples of it were executed which we now find in Greece.

The most typical specimen we now know is that of the Choragic Monument of Lysicrates (woodcut No. 209), which, notwithstanding all its elegance of detail and execution, can hardly be pronounced to be perfect, the Egyptian and Asiatic features being only very indifferently united to one another. The foliaged part is rich and full, but is not carried up into the upper or Ionic portion, which is in comparison lean and poor; and though separately the two parts are irreproachable, it was left to the Romans so to blend the two together as to make a perfectly satisfactory whole out of them.

In this example, as now existing, the junction of the column with the capital is left a plain sinking, and so it is generally copied in modern times; but there can be little doubt that this was originally filled by a bronze wreath, which was probably gilt. Accordingly this is so represented in the woodcut as being essential to the completion of the order. The base and shaft have, like the upper part of the capital, more Ionic feeling in them than the order was afterwards allowed to retain; and altogether it is, as here practised, far more elegant, though less complete, than the Roman form which superseded it.



210. Order of the Tower of the Winds, Athens.

The other Athenian example, that of the Tower of the Winds (woodcut No. 210), is remarkable as being almost purely Egyptian in its types, with no Ionic admixture. The columns have no bases, the capitals no volutes, and the water-leaf clings as closely to the bell as it does in the Egyptian examples. The result

altogether wants richness, and, though appropriate on so small a scale, would hardly be pleasing on a larger.

The great example of the temple of Jupiter Olympius differs in no essential part from the Roman order, except that the corners of the abacus are not cut off; and that, being executed in Athens, there is a degree of taste and art displayed in its execution which we do not find in any Roman examples. It strictly speaking, however, belongs to that school, and should be enumerated with them, and not as a Grecian example.

Caryatides.

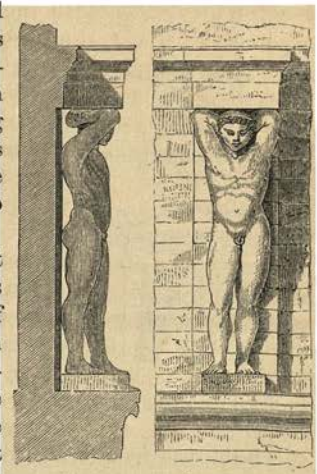
It has been already explained that the Egyptians never used caryatide figures, properly so called, to support the entablatures of their architecture, their figures being always attached to the front of the columns or piers, which were the real bearing mass. At Persepolis, and elsewhere in the East, we find figures everywhere employed supporting the throne or the platform of the palaces of the kings; not, indeed, on their heads, as the Greeks used them, but rather in their uplifted hands.

211. Caryatide Figure from the Erechtheium.

212. Caryatide Figure in the British Museum.

The name, however, as well as their being only used in conjunction with the Ionic order and with Ionic details, all point to an Asiatic origin for this very questionable form of art. As used in the little portico attached to the Erechtheium, these figures are used with so much taste, and all the ornaments are so elegant, that it is difficult to criticise or find fault; but it is nevertheless certain that it was a mistake which even the art of the Greeks could hardly conceal. To use

human figures to support a cornice is unpardonable, unless it is done as a mere secondary adjunct to a building. In the Erechtheium it is a little too prominent for this, though used with as much discretion as was perhaps possible under the circumstances. Another example of the sort is shown in woodcut No. 212, which, by employing a taller cap, avoids some of the objections to the other; but the figure itself, on the other hand, is less architectural, and so errs on the other side.



213. Telamones at Agrigentum.

Another form of this class of support is that of the giants or *Telamones*, instances of which are found supporting the roof of the great temple at Agrigentum, and in the baths of the semi-Greek city of Pompeii. As they do not actually bear the entablature, but only seem to relieve the masonry behind them, their employment is less objectionable than that of the female figure above described; but even they hardly fulfil the conditions of true art, and their place might be better filled by some more strictly architectural feature.

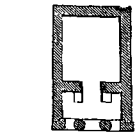
FORMS OF TEMPLES.

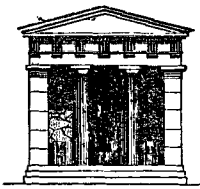
The arrangements of Grecian Doric temples show almost less variety than the forms of the pillars, and no materials exist for tracing their gradual development in an historical point of view. The temples at Corinth, and the oldest at Selinus, are both perfect examples of the hexastyle arrangement to which the Greeks adhered in all ages; and though there can be little doubt that the peripteral arrangement, as well as the order itself, was borrowed from Egypt, it still was so much modified before it appeared in Greece, that it would be interesting, if it could be done, to trace the steps of the change.

In an architectural point of view this is by no means difficult. The simplest Greek temples were mere cells, or small square apartments, suited to contain an image—the front being what is technically called *distyle in antis*, or with 2 pillars between *antæ*, or square pilaster-like piers terminating the side walls. Hence the interior enclosure of Grecian temples—the temple itself as opposed to the peristyle or system of external columns—is called the cell, however large and splendid it may be.

The next change was to separate the interior into a cell and porch by a wall with a large doorway in it, as in the small temple at Rhamnus (woodcut No. 214), where the opening however can scarcely be called a doorway, as it extends to the roof. A third change was to put a porch of 4 pillars in front of the last arrangement, or, as appears to have been more usual, to bring forward the screen to the position of the pillars as in the last example, and to place the 4 pillars

in front of this. None of these plans admitted of a peristyle, or pillars on the flanks. To obtain this it was necessary to increase the number of pillars of the portico to 6, or, as it is termed, to make it hexastyle, the 2 outer pillars being the first of a range of 13 or 15 columns, extended along each side of the temple. The cell in this arrangement was a complete temple in itself—distyle in antis, most frequently made so at both ends, and the whole enclosed in its envelope of columns, as in woodcut No. 215. Sometimes the cell was tetrastyle or with 4 pillars in front.

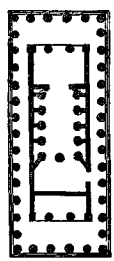




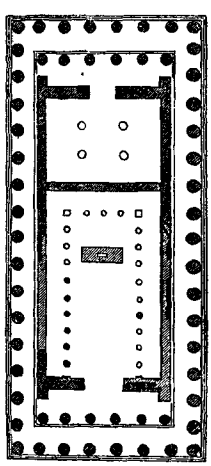
214. Small Temple at Rhamnus.

In this form the Greek temple may be said to be complete, very few exceptions occurring to the rule, though the Parthenon itself is one of these few. It has a hexastyle portico at each end of the cell; beyond this is an octastyle portico at each end, and 17 columns on each flank.

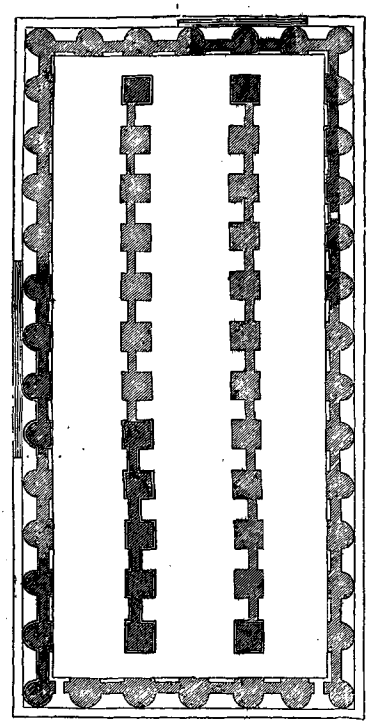
The great temple at Selinus is also octastyle, but it is neither so simple nor so beautiful in its arrangement; and, from the decline



215. Plan of Temple of Apollo at Bassæ. Scale 100 ft. to 1 in.



216. Plan of Parthenon at Athens. Scale 100 ft. to 1 in.



217. Plan of Great Temple at Agrigentum. Scale 100 ft. to 1 in.

of style in the art when it was built, is altogether a very inferior example.

Another great exception is the great temple at Agrigentum (woodcut No. 219), where the architect attempted an order on so gigantic a scale as to be unable to construct the pillars with their architraves standing free. The interstices of the columns are therefore built up with walls pierced with windows, and altogether the architecture is so bad, that even its colossal dimensions must have failed to render it at any time a pleasing or satisfactory work of art.

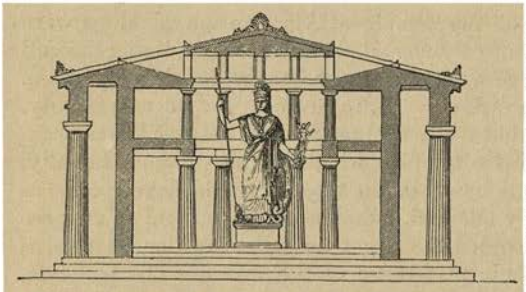
A fourth exception is the temple at Pæstum before referred to, with 9 pillars in front, a clumsy expedient, but which arose from its having a range of columns down the centre to support the ridge of the roof by a simpler mode than the triangular truss usually employed for carrying the ridge between two ranges of columns.

With the exception of the temple at Agrigentum, all these were peristylar, or had ranges of columns all round them, enclosing the cell as it were in a case, an arrangement so apparently devoid of purpose, that it is necessary to say a few words to account for its universality. It will not suffice to say that it was adopted merely because it was beautiful. The forms of Egyptian temples, which had no pillars externally, were as perfect, and in the hands of the Greeks would have become as beautiful, as the one they adopted. Besides, it is natural to suppose they would rather have copied the larger than the smaller temples, if no motive existed for their preference of the latter. The peristyle, too, was ill suited for an ambulatory, or place for processions to circulate round the temple; it was too narrow for this, and too high to protect the procession from the rain. Indeed, I know of no suggestion except that it was adapted to protect the paintings on the walls of the cells from the inclemency of the weather. I think it hardly admits of a doubt that the walls were painted, and that without protection of some sort this would very soon have been obliterated. It seems also very evident that the peristyle was not only practically, but artistically, most admirably adapted for this purpose. The paintings of the Greeks were, like those of the Egyptians, composed of numerous detached groups, connected only by the story, and it almost required the intervention of pillars, or some means of dividing into compartments the surface to be so painted, to separate these groups from one another, and to prevent the whole sequence from being seen at once; while, on the other hand, nothing can have been more beautiful than the white marble columns relieved against a richly coloured plane surface. The one seems so necessary to the other, that it can, I think, hardly be doubted but that this was the cause, and that the effect must have been most surpassingly beautiful.

MODE OF LIGHTING TEMPLES.

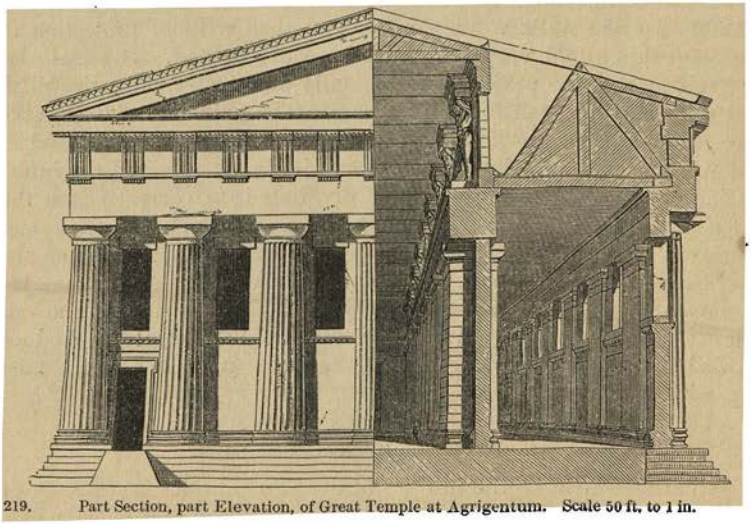
The arrangement of the interior of Grecian temples necessarily depended on the mode in which they were lighted. No one will, I believe, now contend, as was once done, that it was by lamplight alone that the beauty of their interiors could be seen; and as light certainly

was not introduced through the side walls, nor could be in sufficient quantities through the doorways, it is only from the roof that it could be admitted. At the same time it could not have been by a large horizontal opening in the roof, as has been suggested, as that would have admitted the rain and snow as well as the light; and the only alternative seems to be one I suggested some years ago—of a clerestory,[1] similar internally to that found in all the great Egyptian temples,[2] but externally requiring such a change of arrangement as was necessary to adapt it to a sloping instead of a flat roof. This seems to have been effected by countersinking it into the roof, so as to make it in fact 3 ridges in those parts where the light was admitted, though the regular slope of the roof was retained between these openings, so that neither the ridge nor the continuity of the lines of the roof was interfered with. This would effect all that was required, and in the most beautiful manner, besides that it agrees with all the remains of Greek temples that now exist, as well as with all the descriptions that have been handed down to us from antiquity.



218. Section of the Parthenon. Scale 50 ft. to 1 in.

This arrangement will be understood from the section of the Parthenon (woodcut No. 218), restored in accordance with the above explanation, which agrees perfectly with all

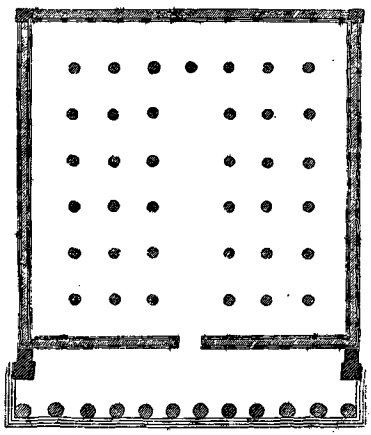


219. Part Section, part Elevation, of Great Temple at Agrigentum. Scale 50 ft. to 1 in.

[1] For full details of this see 'True Principles of Beauty in Art,' p. 385 *et seq.*
[2] See Woodcuts Nos. 168, 170, 172.

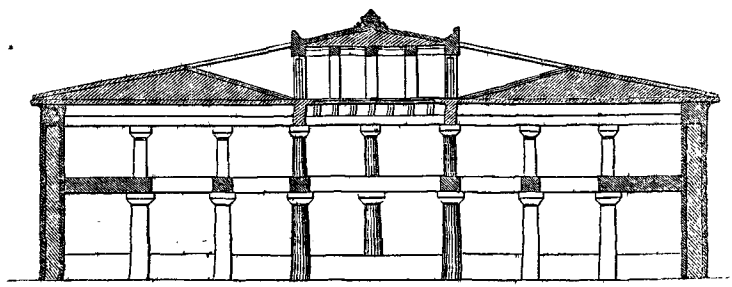
that remains on the spot, as well as with all the accounts we have of that celebrated temple. The same system applies even more easily to the great hexastyle at Pæstum, and to the beautiful little temple of Apollo at Bassæ, in Phigalia (woodcut No. 215), and indeed to all regular Greek temples; and what is a more important point in the examination of this theory, it applies equally to the exceptional ones. The side aisles, for instance, of the great temple at Agrigentum were, as before mentioned, lighted by side windows; the central one could only be lighted from the roof, and it is easy to see how this could be effected by introducing it between the telamones, as shown in the woodcut No. 219.

Another exceptional temple is that at Eleusis, which we know to have had windows and shutters above, used in admitting or excluding the light during the celebration of the mysteries. The arrangements of this temple lend themselves admirably to this mode of introducing light, as shown in the plan and section annexed (Nos. 220 and 221).



220. Plan of Temple of Ceres at Eleusis. Scale 100 ft. to 1 in.

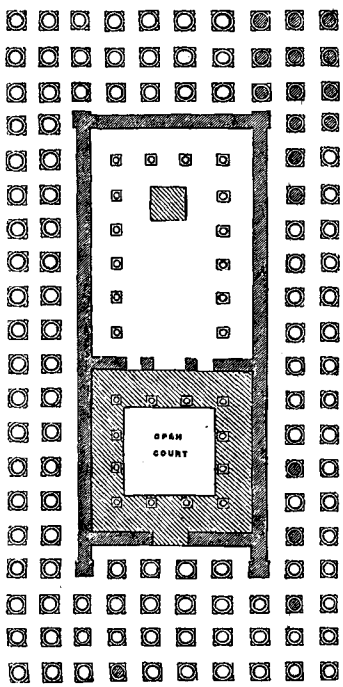
The great temple of Jupiter Olympius (woodcut No. 222) was apparently lighted according to another system, owing probably to its immense height, and other peculiarities of construction. The light seems to have been introduced into what may be considered a court, or *hypæthrum*, in front of the cell, which was lighted through its inner wall. This seems to have been the temple mentioned by Vitruvius,[1] whose description has given rise to such confusion on this subject. It is the only one to which his words apply, or to which it is possible to adapt such a mode of lighting as he describes.



221. Section of Temple of Ceres at Eleusis. Scale 50 ft. to 1 in.

[1] Vitruvius, lib. i. ch. 1.

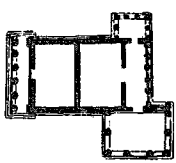
The Ionic temples of Asia are all too much ruined to enable us to say exactly in what manner, and to what extent, this mode of lighting was applied to them, though I have no doubt that the mode was very similar in all its main features.



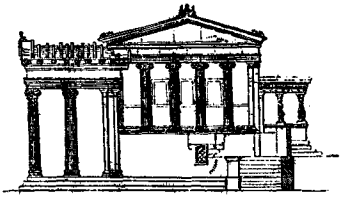
222. Plan of Temple of Jupiter Olympius at Athens. Scale 100 ft. to 1 in.

The little temple of Nikè Apteros, and the temple on the Ilissus, were both too small to require any complicated arrangement of the sort, and the Erechtheium was lighted by windows which still remain at the west end, so that we can hardly feel sure that the same expedient was not adopted to at least some extent in the Asiatic examples. The latter, however, is almost the only instance of windows in any European Greek temple, the only other example being in the very exceptional temple at Agrigentum. It is valuable, besides, as showing how little the Greeks were bound by rules, or by any fancied laws of symmetry.

As is shown in the plan, elevation, and view (woodcuts Nos. 223, 224, 225), the Erechtheium consisted, properly speaking, of 3 temples grouped together; and it is astonishing what pains the architect took to prevent their being mistaken for one. The porticos of 2 of them are on different levels, and the third or caryatide porch is of a different height and different style. Every one of these features is perfectly symmetrical in itself, and the group is beautifully balanced and arranged; and yet no Gothic architect in his wildest moments could have conceived

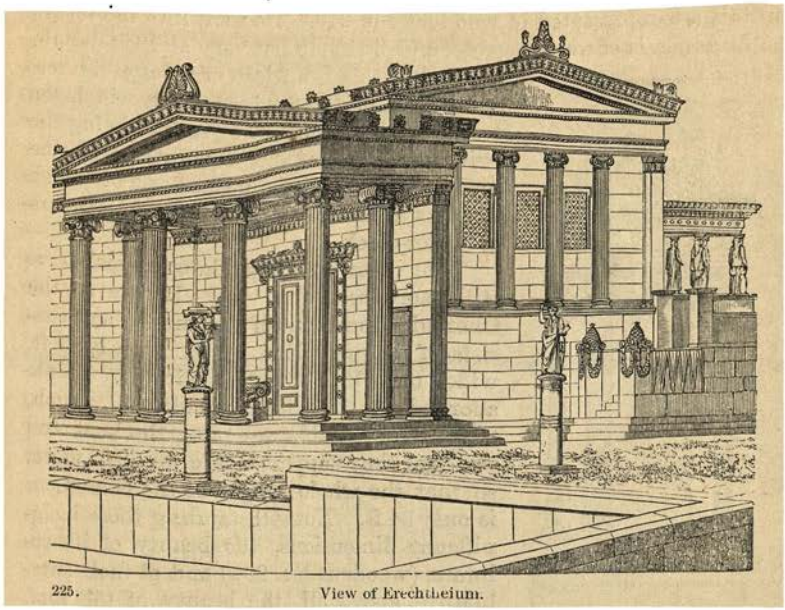


223. Plan of Erechtheium. Scale 100 ft. to 1 in.



224. Section of Erechtheium. Scale 50 ft. to 1 in.

anything more picturesquely irregular than the whole becomes. Indeed there can be no greater mistake than to suppose that Greek architecture was fettered by any fixed laws of formal symmetry: each detail, every feature, every object, such as a hall or temple, which could be considered as one complete and separate whole, was perfectly



225. View of Erechtheium.

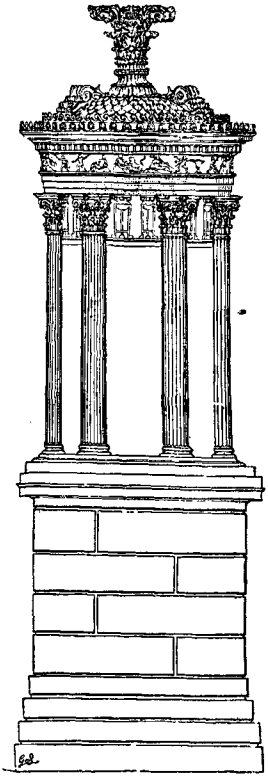
symmetrical and regular; but no two buildings—no two apartments—if for different purposes, were made to look like one. On the contrary, it is quite curious to observe what pains they took to arrange their buildings so as to produce variety and contrast, instead of formality or singleness of effect. Temples, when near one another, were never placed parallel, nor were even their propylæa and adjuncts ever so arranged as to be seen at once or in one line. The Egyptians, as before remarked, had the same feeling, but carried it into even the details of the same building, which the Greeks did not. In this, indeed, as in almost every other artistic mode of expression, they seem to have hit exactly the happy medium, so as to produce the greatest harmony with the greatest variety, and to satisfy the minutest scrutiny and the most refined taste, while their buildings produced an immediate and striking effect on even the most careless and casual beholders.

MUNICIPAL ARCHITECTURE.

Very little now remains of all the various classes of municipal and domestic buildings which once must have covered the land of Greece, and from what we know of the exquisite feeling for art that pervaded that people, were certainly not less beautiful, though more ephemeral, than the sacred buildings whose ruins still remain to us.

There are, however, two buildings in Athens which, though small, give us most exalted ideas of their taste in such matters. The first, already alluded to, usually known as the Tower of the Winds, is a plain octagonal building about 45 ft. in height by 24 in width, ornamented by 2 small porches of 2 pillars each, of the Corinthian order, whose

capitals are represented in woodcut No. 210. Its roof, like the rest of the building, is of white marble, and of simple but very elegant design, and below this is a frieze of 8 large figures, symbolical of the 8 winds, from which the tower takes its name, they in fact being the principal objects and ornaments of the building, the most important use of which appears to have been to contain a clepsydra or water-clock.



226. Choragic Monument of Lysicrates. No scale.

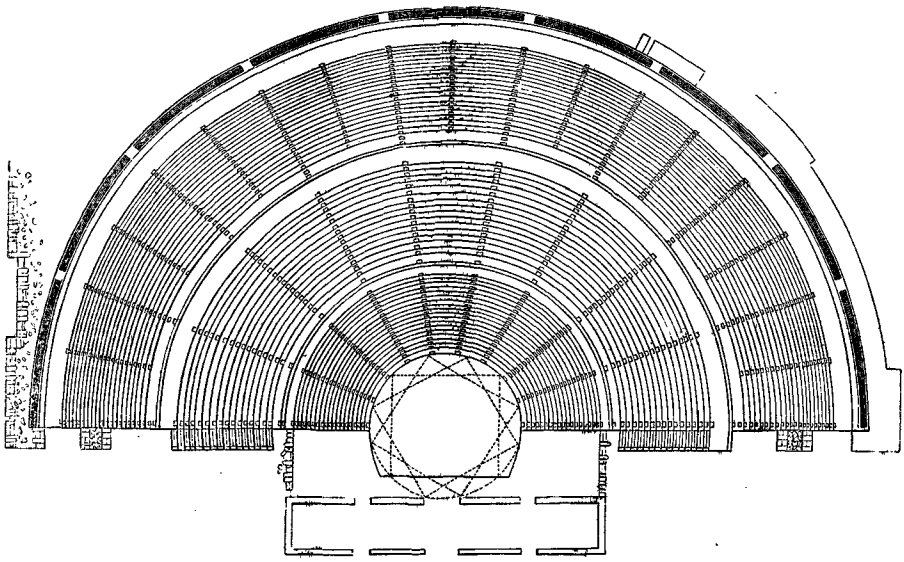
The other building, though smaller, is still more beautiful. It is known as the Choragic Monument of Lysicrates, and consists of a square base 12 ft. high by 9 ft. wide, on which stands a circular temple adorned by 6 Corinthian columns, which, with their entablature, and the roof and pedestal they support, make up 22 ft. more, so that the whole height of the monument is only 34 ft. Notwithstanding these insignificant dimensions, the beauty of its columns (woodcut No. 209) and of their entablature, above all, the beauty of the roof, and of the finial ornament designed to complete the building, which is unrivalled for elegance even in Greek art, together make up a composition so perfect that nothing in any other style or age can be said to surpass it. If it is a fair index of the art that was lavished on the smaller objects, the temples hardly give a just idea of all that have perished.

Theatres.

In extreme contrast with the buildings last described, which were among the smallest, came the theatres, which were the largest of the monuments the Greeks seem ever to have attempted.

The annexed plan of one at Dramyssus, the ancient Dodona, will give an idea of their forms and arrangements. Its dimensions may be said to be gigantic, being 443 ft. across; but even this, though perhaps the largest in Greece, is far surpassed by many in Asia Minor. What remains of it, however, is merely the auditorium, and consists only of ranges of seats arranged in a semicircle, but without architectural ornament. In all the examples in Europe, the proscenium, which was the only part architecturally ornamented, has perished, so that, till we can restore this with something like certainty, the theatres hardly come within the class of architecture as a fine art.

In Asia Minor some of the theatres have their proscenia adorned with niches and columns, and friezes of great richness, but all these



227. Plan of Theatre at Dramyssus. Scale 100 ft. to 1 in.

belong to the Roman period; and though probably copies of the mode in which the Greeks ornamented theirs, are so corrupt in style as to prevent their being used with safety in attempting to restore the earlier examples.

Many circumstances would indeed induce us to believe that the proscenia of the earlier theatres may have been of wood or bronze, or both combined, and heightened by painting and carving to a great degree of richness. This, though appropriate and consonant with the origin and history of the drama, would be fatal to the expectation of anything being found to illustrate its earliest forms.

TOMBS.

Like the other Indo-Germanic races, the Greeks never were tomb-builders, and nothing of any importance of this class is found in Greece, except the tombs of the early Pelasgic races, which were either tumuli or treasuries, as they are popularly called. There are, it is true, some headstones and small pillars of great beauty, but they are monolithic, and belong rather to the department of sculpture than of architecture. In Asia Minor there are some important tombs, some built and others cut in the rock. Some of the latter have been described before in speaking of the tombs of the Lycians. The built examples which remain almost all belong to the Roman period, though the most magnificent mausoleum of the ancient world, in the eyes of the Greeks, was that which the Queen Artemisia erected at Halicarnassus to the

memory of her husband, Mausolus, which gave its name to all subsequent examples of its class. It belonged to the great period of Greek art, and must have been a splendid building, though our possessing only verbal descriptions of it prevents our being able to judge for ourselves how far it conformed with the rules of good taste.

We have nothing left but imperfect verbal descriptions of the domestic, and even of the palatial architecture of Greece, and, consequently, can only judge imperfectly of its forms; and Pompeii, though half a Greek city, belongs to too late and too corrupt an age to enable us to use it even as an illustration; but we may rest assured that in this, as in everything else, the Greeks displayed the same exquisite taste which pervades not only their monumental architecture, but all their works in metal or clay, down to the meanest object, which have been preserved to our times.

It is probable that the forms of their houses were much more irregular and picturesque than we are in the habit of supposing they were. They seem to have taken such pains in their temples—in the Erechtheium, for instance, and at Eleusis—to make every part tell its own tale, that anything like forced regularity must have been offensive to them, and they would probably make every apartment exactly of the dimensions required, and group them so that no one should under any circumstances be confounded with another.

This, however, with all the details of their domestic arts, must now remain to us as mere speculation, and the architectural history of Greece must be confined to her temples and monumental erections. These suffice to explain the nature and forms of the art, and to assign to it the rank of the purest and most intellectual of all the styles which have yet been invented in any part of the world.

BOOK VII.

ROMAN ARCHITECTURE.

CHAPTER I.

ETRURIA.

CONTENTS.

Historical notice — Temples — Rock-cut tombs — Tombs at Castel d'Asso — Tumuli.

CHRONOLOGICAL MEMORANDA.

Migration from Asia Minor	about 12th cent. B.C.
Tomb of Porsenna.	about B.C. 500
Etruria becomes subject to Rome	„ 300

OUR subject again carries us back to a very early period—that of the first introduction of art into Italy, for the traces of which it is necessary to direct our attention to Etruria. In describing the remains found in this country we shall come to nothing very remarkable for its bearing upon merely architectural questions. The study of the monuments of Etruria derives the greater part of its interest from its historical importance. In this point of view there are perhaps few parts of the world whose remains of art are more instructive than those of Etruria. Without the lessons which we learn from them, the architectural history of Rome is an unintelligible maze; and the connection between the arts of Greece and Italy, from the earliest time, equally inexplicable.

Without attempting to enter into the many controversies that have of late years been raised with regard to the origin and early history of the Etruscans,[1] it will be necessary to state thus much:—They were an Asiatic people who 12 or 13 centuries before the Christian era emigrated from Lydia, driven from their home either by the pressure of a long famine or by the rising power of some neighbouring nation, most probably that of the Assyrians. Landed in Italy, they dispossessed of some of their cities the Umbrians, a people of similar origin to themselves, and settled themselves between the valleys of

[1] These questions are discussed at considerable length in the 'True Principles of Beauty in Art,' p. 426 *et seqq.*

the Tiber and the Arno. In this fertile district they founded 12 cities, and established a federal union of 12 states, which is the peculiar institution of the race.

Here they appear to have flourished for 7 or 8 centuries, receiving the expatriated Trojans and other similar accessions from their native shores, and keeping up a constant communication of commerce and art with the cognate Pelasgic races of Greece and other parts.

When Rome was first founded, her kings, laws, and institutions were Etruscan, and consequently of Asiatic origin, though the mass of the inhabitants were probably of the old Italian stock. About 5 centuries before Christ the Romans threw off the Etruscan yoke, and established the peculiar municipal institutions of the Indo-Germanic races. Eventually, after a contest of 2 centuries' duration, they conquered in succession the several states of the then old and decrepit Union, and based their colossal empire on the ruins of the parent nation of Etruria.

Until the very latest time, however, Rome retained, both in her institutions and her arts, many peculiarities derived from her original rulers; and it is only by studying what remains of the older race that we can understand either the origin or meaning of those peculiar features.

The origin of Etruscan art is beyond all doubt Asiatic, and its original seat was some part of the countries between the Tigris and the western coast of Asia Minor. The same art, and from the same source, prevailed in Greece under the Pelasgi. In that country, as has been already explained, it ceased to exist as a separate style of art in very early times. It was there amalgamated with Egyptian and Assyrian forms under the Dorians during the 4 or 5 centuries that elapsed between the extinction of the pure Pelasgic style and the rise of true Hellenic art. The united style thus slowly ripened into that noble and chastened art which we have described in the last chapter.

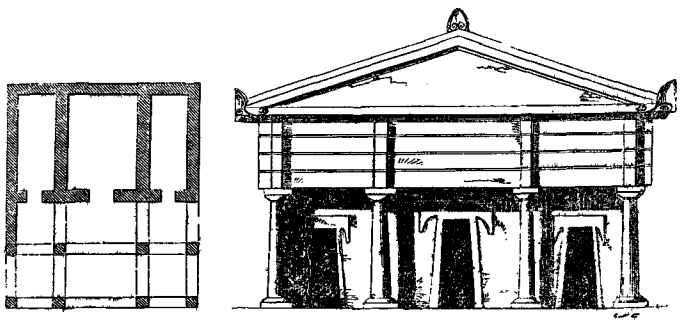
In Etruria the old Asiatic style enjoyed no such advantages. It there was left without a rival or associate, to luxuriate in its own natural wildness; but it remained an exotic unsuited to the climate. It never blended itself with the art of the people among whom it was planted. Perhaps there was nothing with which it could blend itself. It thus bore no such fruit as in Greece, and could not maintain itself after the people which had introduced it had succumbed beneath the superior energy of their Italian conquerors.

Temples.

As might be expected of a people of Asiatic origin, the Etruscans had no temples worthy of the name. At least no remains of any are now to be found, and those we read of were small, though probably highly ornamented, wooden fabrics, which of course perished early. On the other hand, the Etruscans were an essentially tomb-building race. Their religion took very much the character of ancestral worship, and it was this particular feature of it which left so strong an impress on the mythology of Greece and Rome. It was not an idolatry,

nor had it a distinct and privileged priesthood; consequently it was devoid of all tendency to the feelings which find their utterance in architectural splendour.

We know from Vitruvius that there were two classes of temples in Etruria: the first circular, like their tombs, and dedicated to one god or demigod; the other rectangular, with 3 cells sacred to 3 deities. The appearance and arrangement of the rectangular temples is scarcely more than a mere antiquarian question. The restoration of the elevation from the description in Vitruvius is by no means easy or certain. My own belief is that it resembled that given in the annexed woodcut (No. 228), but it is not worth while here to enter into all the reasons



228. Plan and Section of an Etruscan Temple.

for this impression, which I have given elsewhere.[1] In fact, these temples, as architectural objects, are so insignificant as hardly to deserve much consideration. The restored ground-plan explains their general arrangements, as commonly admitted by those who have studied the subject.

The original Etruscan circular temple I believe to have been a mere circular cell with a porch. The Romans surrounded it with a peristyle, which probably did not exist in the original style. They magnified it afterwards into the most characteristic and splendid of all their temples, the Pantheon, whose portico is Etruscan in arrangement and design, and whose cell still more distinctly belongs to that style. The temple of Capitoline Jupiter was in all respects an Etruscan building; and most of the other temples of the Romans, though affecting a peristylar form, returned to the arrangements which had been adopted in the first instance from their neighbours and original rulers. There can be little doubt that the simpler Roman temples of circular form are derived from Etruscan originals. It would therefore be of great importance if we were able to illustrate the later buildings from existing remains of the older; but the fact is that such deductions as we may draw from the copies are our only source of information respecting the originals.

We know little of any of the civil buildings with which the cities

[1] True Principles of Beauty in Art, p. 446 *et seqq.*

of Etruria were adorned, except the remains of their theatres and amphitheatres. The form of the latter was essentially Etruscan, and was adopted by the Romans, with whom it became their most characteristic and grandest architectural object. Of the amphitheatres of ancient Etruria only one now remains in so perfect a state as to enable us to judge of their forms. It is that at Sutri, which, however, being entirely cut in the rock, neither affords the means of judging of the mode of construction, nor enables us to determine the age. The general dimensions are 295 ft. in its greatest length, by 265 in breadth, and consequently much nearer a circle than those of the Romans usually were; but in other respects the arrangements are such as were usually found in after times.

Besides these we have numerous works of utility, but these belong more strictly to engineering than to architectural science. The city walls of the Etruscans surpass those of any other ancient nation in extent and beauty of workmanship. Their works of drainage and their bridges, as well as those of the kindred Pelasgians in Greece, still remain monuments of their industrial science and skill, which their successors never surpassed.

On the whole perhaps we are justified in asserting that the Etruscans were not an architectural people, and had no temples or palaces worthy of attention. At all events it is certain that nothing of the sort is now to be found even in ruins, and, were it not that the study of Etruscan art is a necessary introduction to that of Rome, it would hardly be worth while to try to gather together and to illustrate the few fragments and notices of it that remain.

Tombs.

The tombs now found of the Etruscans may be divided into two classes:—First, those cut in the rock, and resembling dwelling-houses; secondly, the circular tumuli, which latter are by far the most numerous and important class.

Each of these may be again subdivided into two kinds. The rock-cut tombs include, firstly, those with only a façade on the face of the rock, and a sepulchral chamber within; secondly, those cut quite out of the rock, and standing free all round. To this class probably once belonged an immense number of tombs built in the ordinary way; but all these have totally disappeared, and consequently the class, as now under consideration, consists entirely of excavated examples.

The second class may be divided into those tumuli erected over chambers cut in the tufaceous rock which is found all over Etruria, and those which have chambers built above ground.

In the present state of our knowledge it is impossible to say which of these classes is the older. We know that the Egyptians buried in caves long before the Etruscans landed in Italy, and at the same time raised pyramids over rock-cut and built chambers. We know too that Abraham was buried in the cave of Machpelah in Syria. On the other hand, the tombs at Smyrna (woodcut No. 148), the treasuries of Mycenæ, the sepulchre of Alyattes, and many others, are proofs of the antiquity

of the tumuli, which moreover are found all over Europe and Asia, and appear to have existed from the earliest ages.

The comparative antiquity of the different kinds of tombs being thus doubtful, it will be sufficient for the purposes of the present work to classify them architecturally. It may be assumed, I believe, with safety, that all the modes which have been enumerated were practised by the Etruscans at a period very slightly subsequent to their migration into Italy.

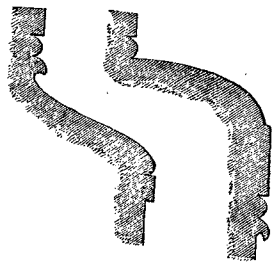
Of the first class of the rock-cut tombs—those with merely a façade externally—the most remarkable group is that at Castel d'Asso. At this place there is a perpendicular cliff with hundreds of these tombs ranged along its face, like houses in a street. A similar arrangement is found in Egypt at Beni Hassan, and at Petra, and around all the more ancient cities of Asia Minor.

In Etruria they generally consist of one chamber lighted by the doorway only. Their internal arrangement appears to be an imitation of a dwelling chamber, with furniture, like the apartment itself, cut out of the rock. Externally they have little or no pretension to architectural decoration. It is true that, executed at a much later period, and under Roman domination, some tombs are found adorned with frontispieces of a debased Doric or Ionic order; but such cannot be taken as specimens of Etruscan art, but rather of that corruption of style sure to arise from a conquered people trying to imitate the arts of their rulers.

The general appearance of the second class of rock-cut tombs will be understood from the woodcut No. 229, representing two monuments at Castel d'Asso. Unfortunately neither is complete, nor is there any complete example known to exist of this class. Perhaps the apex was added structurally; and these, like all such things in Etruria, have perished. Perhaps, if cut in the rock, the terminals were slender carved ornaments, and consequently liable to injury. They are usually restored by antiquaries in the shape of rectilinear pyramids, but there is no authority for this as far as I know. On the contrary, it is more in accordance with what we know of the style and its affinities to suppose that the termination of these monuments, even if added in masonry, was curvilinear.

229. Tombs at Castel d'Asso. From the Annale del Instituto.

One remarkable thing about the rock-cut tombs is the form of their mouldings, which differ from any found elsewhere in Europe. Two of these are shown in the annexed woodcut (No. 230). They are very numerous and in great variety, but do not in any instance show the slightest trace of a cornice, nor of any tendency thereto. In place of this, on the contrary, we find only a reverse moulding altogether. It is probable that similar forms will be found in Asia Minor, and something resembling them occurs at Persepolis and elsewhere. It is remarkable that this feature did not penetrate to Rome, and that no trace of its influence is found there, as might be expected.[1]



230. Mouldings from Tombs at Castel d'Asso.

Tumuli.

The simplest and therefore perhaps the earliest monument which can be erected, by a people who reverence their departed relatives, over the graves of the dead, is a mound of earth or a cairn of stones, and such seems to have been the form among the Tartar races of mankind from the earliest days to the present hour.[2] It is scarcely necessary to remark how universal such monuments were among the ruder tribes of Northern Europe. The Etruscans seem to have improved upon this by surrounding the base with a *podium*, or supporting wall of masonry. This not only defined its limits and gave it dignity, but enabled entrances to be made in it, and otherwise converted it from a mere hillock into a monumental structure. It is usually supposed that this basement was an invariable part of all Etruscan tumuli, and when it is not found it is assumed that it has been removed, or that it is buried in the rubbish of the mound. No doubt such a stone basement may easily have been removed by the peasantry, or buried, but it is by no means clear that this was invariably the case. It seems that the enclosure was frequently a circle of stones or monumental stelæ, in the centre of which the tumulus stood. The monuments have hitherto been so carelessly examined and restored, that it is difficult to arrive at anything like certainty with regard to the details of their structure. Nor can we draw any certain conclusion from a comparison with other tumuli of cognate races. The description by Herodotus of the tomb of Alyattes at Sardis, that by Pausanias of those of Epytus in Arcadia, and the appearances of those at Mycenæ and Orchomenus, might be interpreted either way; but those at Smyrna, and a great number at least of those in Etruria, have the circle of stones as a supporting base to the mound.

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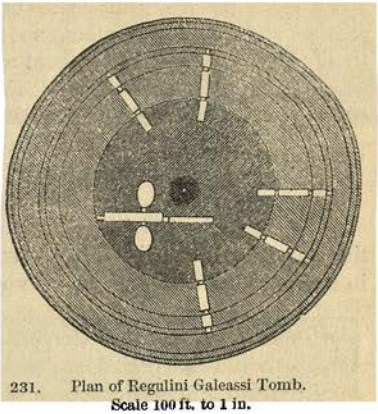
[1] Even in more modern times I know of no building showing a trace of these forms except the tomb of Theodoric at Ravenna. This, however, is Etruscan both in form and detail, as will be seen farther on.

[2] See woodcut No. 90, which might almost be taken for a representation of an Etruscan tomb.

These tumuli are found existing in immense numbers in every necropolis of Etruria. A large space is generally set apart for the purpose outside the walls of all the great cities. In these cemeteries the tumuli are arranged in rows, like houses in streets. Even now we can count them by hundreds, and in the neighbourhood of the largest cities—at Vulci, for instance—almost by thousands.

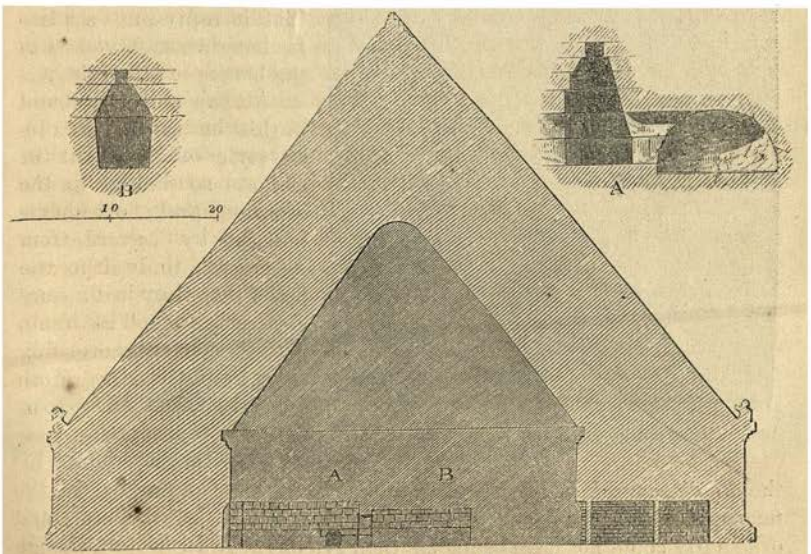
Most of them are now worn down by the effect of time to nearly the level of the ground, though some of the larger ones still retain an imposing appearance. Nearly all have been rifled at some early period, though the treasures still discovered almost daily in some places show how vast their extent was, and how much even now remains to be done before this vast mine of antiquity can be said to be exhausted.



231. Plan of Regulini Galeassi Tomb.
Scale 100 ft. to 1 in.

One of the most remarkable among those that have been opened in modern times is at Cervetere, the ancient Cære, known as the Regulini Galeassi tomb, from the names of its discoverers.

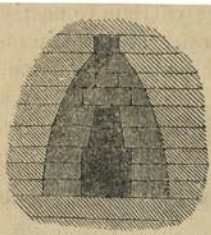
Like a Nubian pyramid or Buddhist tope, it consists of an inner and older tumulus, around and over which another has been added. In the outer mound are 5 tombs either of dependent or inferior personages. These were rifled long ago; but the outer pyramid having effectually



232. Sections of Regulini Galeassi Tomb. From Canina's Etruria Antica.
Scale for large section, 50 ft. to 1 in.

concealed the entrance to the principal tomb, it remained untouched till very lately, when it yielded to its discoverers a richer collection of ornaments and utensils in gold and bronze than have ever been found in one place before.

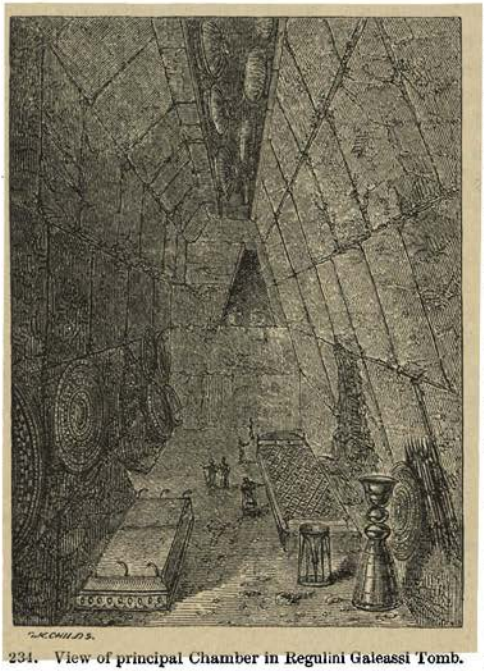
The dimensions and arrangements of this tumulus will be understood from woodcuts Nos. 231 and 232, and from the two sections of the principal tomb which are annexed to them. These last display an irregularity of construction very unusual in such cases, for which no cause can be assigned. The usual section is perfectly regular, as in the annexed woodcut (No. 233), taken from another tomb at the same place.



233. Section of a Tomb at Cære. No Scale.

These chambers, like all those of the early Etruscans, are vaulted on the horizontal principle, like the tombs at Mycenæ and Orchomenus. None found in Italy are at all equal to those of Greece in dimensions or beauty of construction.

Woodcut No. 234 is a perspective view of the principal chamber in the Regulini Galeassi tomb, showing the position of the furniture found in it when first opened, consisting of biers or bedsteads, shields, arrows, and vessels of various sorts. A number of vases are hung in a curious recess in the roof, the form of which would be inexplicable but for the utensils found in it. With this clue to its meaning we can scarcely doubt that it represents a place for hanging such vessels in the houses of the living.

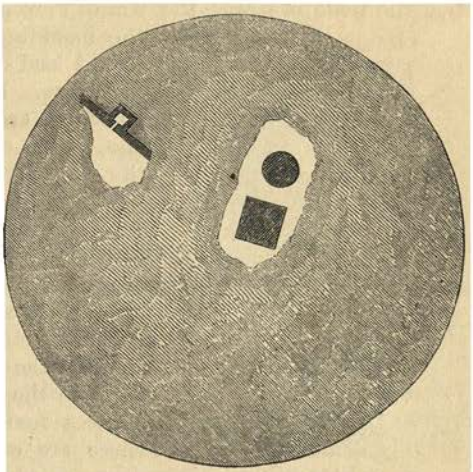


234. View of principal Chamber in Regulini Galeassi Tomb.

All the treasures found in this tomb are in the oldest style of Etruscan art, and are so similar to the bronzes and ornaments brought by Layard from Assyria as to lead to the belief that they had a common origin. The tomb, with its contents, probably dates from the 9th or 10th century before the Christian era.

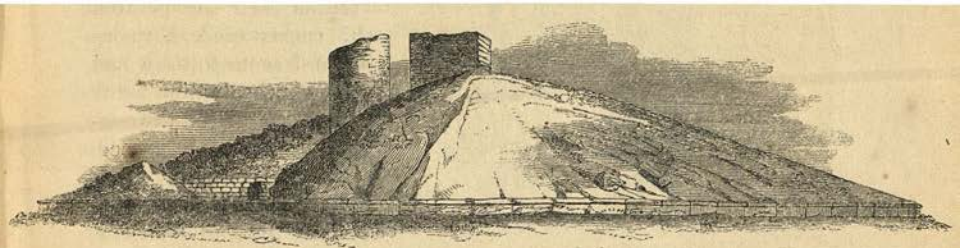
The largest tomb hitherto discovered in Etruria is now known as the Cocumella, in the necropolis at Vulci. It is rather more than 240 ft. in diameter, and originally could not have been less than 115 or 120 ft. in height, though now it only rises to 50 ft.

Near its centre are the remains of two solid towers, one circular, the other square, neither of them actually central, nor are they placed in such a way that we can understand how they can have formed a part of any symmetrical design. A plan and a view of the present appearance of this monument are given in the woodcuts, Nos. 235 and 236.



235. Plan of Cocumella, Vulci. Scale 100 ft. to 1 in.

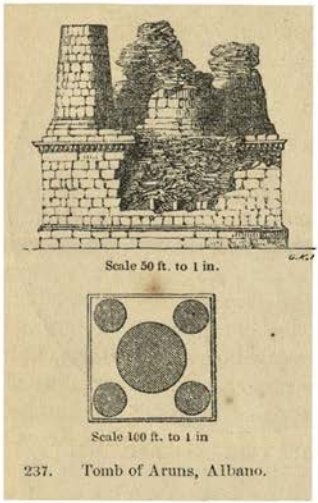
This tumulus, with its principal remaining features thus standing on one side of the centre, may possibly assist us to understand the curious description found in Pliny[1] of the tomb of Porsenna. This description is quoted from Varro, being evidently regarded by Pliny himself as not a little apocryphal. According to this account it consisted of a square basement 300 ft. each way, from which arose 5 pyramids, united at the summit by a bronze circle or cupola. This was again surmounted by 4 other pyramids, the summits of which were again united at a height of 300 ft. from the ground. From this point rose still 5 more pyramids, whose height Varro (from modesty, as Pliny surmises) omits to state, but which was estimated in Etruscan traditions at the same height as the rest of the monument. This last statement, which does not rest on any real authority, may well be regarded as exaggerated; but if we take the total height as about 400 ft., it is easy to understand that in the age of Pliny, when all the buildings were low, such a structure, as high as the steeple at Salisbury, would appear fabulous; but the vast piles that have been erected by tomb-building races in other parts of the earth render it by no means improbable that Varro was justified in what he asserted.



236. View of Cocumella, Vulci.

[1] Plin. Hist., xxxvi. 13.

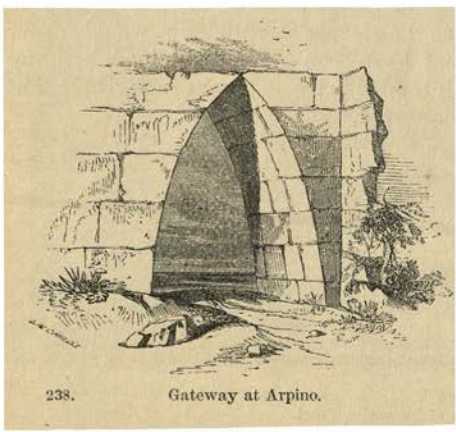
Near the gate of Albano is found a small tomb of 5 pyramidal pillars rising from a square base, exactly corresponding with Varro's description of the lower part of the tomb of Porsenna. It is called by tradition the tomb of Aruns, the son of Porsenna, though the character of the mouldings with which it is adorned would lead us to assign to it a more modern date. It consists of a lofty podium, on which are placed 5 pyramids, a large one in the centre and 4 smaller ones at the angles. Its present appearance is shown in the annexed woodcut (No. 237).



237. Tomb of Aruns, Albano.

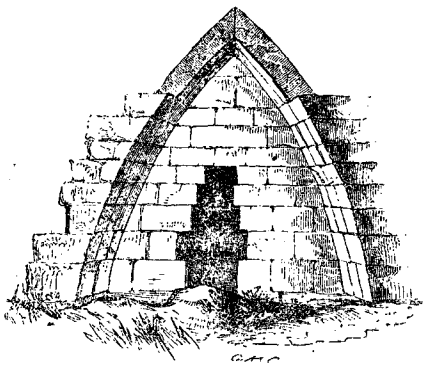
There are not in Etruria any features sufficiently marked to characterise a style of architecture, nor any pillars with their accessories which can be considered to constitute an order. It is true that in some of the rock-cut tombs square piers support the roof; and in one or two instances rounded pillars are found, but these are either without mouldings or ornamented only with Roman details, betraying the lateness of their execution. The absence of built examples of the class of tombs found in the rock prevents us from recognising any of those peculiarities of construction which sometimes are as characteristic of the style and as worthy of attention as the more purely ornamental parts.

From their city gates, their aqueducts and bridges, we know that the Etruscans used the radiating arch, with deep voussoirs and elegant mouldings, at an early age, giving it that character of strength which the Romans afterwards imparted to their works of the same class. The Cloaca Maxima of Rome (woodcut No. 192) must be considered as a work executed under Etruscan superintendence, and a very perfect specimen of the class.


238. Gateway at Arpino.

At the same time the Etruscans used the pointed arch, constructed horizontally, and seem to have had the same predilection for it which characterised the cognate Pelasgian race in Greece. A gateway at Arpino (woodcut No. 238) is almost identical with that at Thoricus, but larger and more elegant; and there are many specimens of the same class found in Italy. The portion of an aqueduct at Tusculum, shown in woodcut No. 239, is a curious transition specimen,

where the two stones meeting at the apex (usually called the Egyptian form, being the first step towards the true arch) are combined with a substructure of horizontal converging masonry.



239. Aqueduct at Tusculum.

In either of these instances the horizontal arch is a legitimate mode of construction, and may have been used long after the principle of the radiating arch was known. The great convenience of the latter, as enabling large spaces to be spanned even with brick or the smallest stones, and thus dispensing with the necessity for stones of very large dimensions, led ultimately to its universal adoption. Subsequently, when the pointed form of the radiating arch was introduced, no motive remained for the retention of the horizontal method, and it was entirely abandoned.

CHAPTER II.

ROME.

INTRODUCTION.

We now approach the last revolution that completed and closed the great cycle of the arts and civilization of the ancient world. We have seen Art spring Minerva-like perfect from the head of her great parent, in Egypt. We have admired it in Assyria, rich, varied, but unstable; aiming at everything, but never attaining maturity or perfection. We have tried to trace the threads of early Pelasgic art in Asia, Greece, and Etruria, spreading its influence over the world, and laying the foundation of other arts which the Pelasgi were incapable of developing. We have seen all these elements gathered together in Greece, the essence extracted from each, and the whole combined into the most perfect and beautiful combinations of intellectual power that the world has yet witnessed. We have now only to contemplate the last act in the great drama, the gorgeous but melancholy catastrophe by which all these styles of architecture were collected in wild confusion in Rome, and perished beneath the luxury and crimes of that mighty people.

View them as we will, the arts of Rome were never an indigenous or natural production of the soil or people, but an aggregation of foreign styles in a state of transition from the old and time-honoured forms of Pagan antiquity to the new development of Christian arts. We cannot of course suppose that the Romans foresaw the result to which their amalgamation of previous styles was tending, still they advanced as steadily towards that result as if a prophetic spirit had guided them to a well-defined conception of what was to be. It was not however permitted to the Romans to complete this task. Long before the ancient methods and ideas had been completely moulded into the new, the power of Rome sank beneath her corruption, and a long pause took place, during which the Christian arts did not advance beyond the point they had reached in the age of Constantine. Indeed in many respects they receded from it during the dark ages. When they reappeared in the 10th and 11th centuries it was in an entirely new garb, and with scarcely a trace of their origin—so distinct indeed that it appears more like a reinvention than a reproduction of forms long since familiar to the Roman world. Thus had Rome retained her power and pre-eminence a century or two longer, a style might have been elaborated as distinct from that of the ancient world, and as complete in itself, as our pointed Gothic, and perhaps more beautiful. Such was

not the destiny of the world; and what we have now to do is to examine this style of transition as we find it in ancient Rome, and familiarise ourselves with the forms it took during the three centuries of its existence, as without this knowledge all the arts of the Gothic era would for ever remain an inexplicable mystery. The chief value of the Roman style consists in the fact that it contains the germs of all that is found in the middle ages, and affords the key by which its mysteries may be unlocked, and its treasures rendered available. Had the transition been carried through in the hands of an art-loving and artistic people, the architectural beauties of Rome must have surpassed those of any other city in the world, for their buildings surpass in scale those of Egypt, and in variety those of Greece, while they pretend to combine the beauties of both. In constructive ingenuity they far surpass anything the world had seen up to their time, but this cannot redeem their offences against good taste, nor enable any of their productions to command our admiration as works of art, nor entitle them to rank as models to be followed either literally or in spirit.

During the first two centuries and a half of her existence, Rome was virtually an Etruscan city, wholly under Etruscan influence; and during that period we read of temples and palaces being built, and of works of immense magnitude being undertaken for the embellishment of the city; and we have even now more remains of kingly than we have of consular Rome.

After expelling her kings, and shaking off Etruscan influence, she existed as a republic for 500 years, and during this long age of barbarism she did nothing to advance science. Literature was almost wholly unknown within her walls, and not one monument has come down to our time, even by tradition, worthy of a city of a tenth part of her power and magnitude. There is probably no instance in the history of the world of a capital city existing so long, populous and peaceful at home, prosperous and powerful abroad, which at the same time was so utterly devoid of any monuments or any magnificence to dignify her existence.

When, however, Carthage was conquered and destroyed, when Greece was overrun and plundered, and Egypt, with her long-treasured art, had become a dependent province, Rome was no longer the city of the Romans, but the sole capital of the civilised world. Into her lap were poured all the artistic riches of the world; to Rome flocked all who sought a higher distinction or a more extended field than their own provincial capitals could then afford. She thus became the centre of all the arts and all the science then known; and so far at least as quantity is concerned, she amply redeemed her previous neglect. It seems an almost indisputable fact, that during the three centuries of the Empire more and larger buildings were erected in Rome and her dependent cities than ever were erected in a like period in any part of the world.

For centuries before the establishment of the Roman Empire, progressive development and increasing population, joined to comparative peace and security, had accumulated around the shores of the Mediter-

ranean a mass of people enjoying material prosperity greater than had ever been known before. All this culminated in the first centuries of the Christian era. The greatness of the ancient world was then full, and a more overwhelming and gorgeous spectacle than the Roman empire then displayed never dazzled the eyes of mankind. From the banks of the Euphrates to those of the Tagus, every city vied with its neighbour in the erection of temples, baths, theatres, and edifices for public use or private luxury. In all cases these display far more evidence of wealth and power than of taste and refinement, and all exhibit traces of that haste to enjoy, which seems incompatible with the correct elaboration of anything that is to be truly great. Notwithstanding all this, there is a greatness in the mass, a grandeur in the conception, and a certain expression of power in all these Roman remains which never fail to strike the beholder with awe, and force him to admire in spite of his better judgment. These qualities, coupled with the associations that attach themselves to every brick and every stone, render the study of them irresistibly attractive. It was with imperial Rome that the ancient world perished; it was in her dominions that the new and Christian world was born. All that was great in Heathendom was gathered within her walls, tied, it is true, into an inextricable knot, which was cut by the sword of the barbarians, who moulded for themselves out of the fragments that polity and those arts which will next occupy our attention. To Rome all previous history tends; from Rome all modern history springs: to her therefore, and to her arts, we inevitably turn, if not to admire, at least to learn, and, if not to imitate, at least to wonder, to contemplate a phase of art as unknown to previous as to subsequent history, and, if properly understood, more replete with instruction than any other form hitherto known. Though the lesson we learn from it is far oftener what to avoid than what to follow, still there is such wisdom to be gathered from it as should guide us in the onward path, and might lead us to a far higher grade than it was given to Rome herself ever to attain.

CHAPTER III.

ROMAN ARCHITECTURE.

CONTENTS.

Origin of style — The arch — Orders: Doric, Ionic, Corinthian, Composite — Temples — The Pantheon — Roman temples at Athens — at Baalbec.

CHRONOLOGICAL MEMORANDA.

	DATES.		DATES.
Foundation of Rome	B.C. 753	Destruction of Pompeii	A.D. 79
Tarquinius Priscus—Cloaca Maxima, foundation of Temple of Jupiter Capitolinus	616	Trajan—Ulpian Basilica and Pillar of Victory	98
Temple of Jupiter Capitolinus dedicated	507	Hadrian builds temple at Rome, Temple of Jupiter Olympius at Athens, &c.	117
Scipio—tomb at Literium	184	Septimius Severus—arch at Rome	194
Augustus—temples at Rome	31	Caracalla—baths	211
Marcellus—theatre at Rome—died	23	Diocletian—palace at Spalatro	284
Agrippa—portico of Pantheon—died	13	Maxentius—Basilica at Rome	306
Nero—burning and rebuilding of Rome—died	A.D. 68	Constantine—transfer of Empire to Constantinople	328
Vespasian—Flavian Amphitheatre built	70		
Titus—arch in Forum	79		

THE earliest inhabitants of Rome were an Indo-Germanic race who established themselves in a country previously occupied by Pelasgians. Their principal neighbour on one side was Etruria, a Pelasgian nation. On the other hand was Magna Græcia, which had been colonised in very early ages by Hellenic or Indo-Germanic settlers. It was therefore impossible that the architecture of the Romans should not be in fact a mixture of that of these two people. As a style of transition, it was only a mechanical juxtaposition of the two styles. The real fusion took place many long centuries afterwards. Throughout the Roman period they remain distinct, and there is no great difficulty in referring almost every feature to its origin.

From the Greeks they borrowed the rectangular peristylar temple, with its columns and horizontal architraves, though they seldom if ever used it in its perfect purity, the cella of the Greek temples not being sufficient for their purposes. The principal Etruscan temples, as we have already shown, were square in plan, and the inner half occupied by one or more cells, to the sides and back of which the portico never extended. The Roman rectangular temple is a mixture of these two: it is generally, like the Greek examples, longer than its breadth, but the colonnade never, I believe, entirely surrounds the building. Sometimes it extends to the two sides as well as the front, but more generally the cella occupies the whole of the inner part, though frequently

ornamented by a false peristyle of three-quarter columns attached to its walls.

Besides this the Romans borrowed from the Etruscans a circular form of temple unknown to the Greeks, but which to their tomb-building predecessors must have been not only a familiar but a favourite form. As used by the Romans it was generally encircled by a peristyle of columns, though it is not clear that the Etruscans so used it. Perhaps this is an improvement adopted from the Greeks on an Etruscan form. In early times these circular temples were dedicated to Vesta, Cybele, or some god or goddess either unknown or not generally worshipped by the Indo-Germanic races; but in latter times this distinction was lost sight of.

A more important characteristic which the Romans borrowed from the Etruscans was the circular arch. It was known, it is true, to the Egyptians, Assyrians, and Greeks; yet none of those people, perhaps excepting the Assyrians, seem to have used it as a feature in their ornamental architecture; but the Etruscans seem to have had a peculiar predilection for it, and from them the Romans adopted it boldly, and introduced it into almost all their buildings. It was not at first used in temples of Grecian form, nor even in their peristylar circular ones. In the civil buildings of the Romans it was a universal feature, but generally placed in juxtaposition with the Grecian orders. In the Colosseum, for instance, the whole construction is arched; but a useless network of ill-designed and ill-arranged Grecian columns, with their entablatures, is spread over the whole. This is a curious instance of the mixture of the two styles, and as such is very characteristic of Roman art; but in an artistic point of view the place of these columns would have been far better supplied by buttresses or panels, or some more correctly constructive expedient.

After having thoroughly familiarised themselves with the forms of the arch as an architectural feature, the Romans made a bold stride in advance by applying it as a vault both to the circular and rectangular forms of buildings. The most perfect examples of this are the Basilica of Maxentius, commonly called the Temple of Peace, and the Rotunda of the Pantheon, both, probably, of nearly the same age. In these buildings the Roman architects so completely emancipated themselves from the trammels of former styles as to entitle them almost to claim the invention of a new style of architecture. It would have required some more practice to invent details appropriate to the purpose; still these two buildings are to this hour unsurpassed for boldness of conception and just appreciation of the mode in which the new invention ought to be applied. This is almost universally acknowledged as far as the interior of the Pantheon is concerned. In simple grandeur it is as yet unequalled; its faults are those of detail only. It is not so easy to judge of the Temple of Peace, from its ruined state; but in so far as we can judge from what remains, in boldness and majesty it must have been quite equal to the other example, though it must have required more familiarity with the style to manage so complicated a form as appropriately as the simpler dome of the Pantheon.

These two buildings may be considered as marking the progress the Romans were able to make in the invention of a new style of architecture, and the state in which they left it to their successors. It is worth remarking how, in transplanting Roman architecture to the new capital, the semi-Oriental nation seized on their own circular form, and, modifying and moulding it to their purpose, wrought out the Byzantine style. There the dome is the great feature, almost wholly to the exclusion of the rectangular form with its intersecting vaults. On the other hand, the rectangular form was appropriated by the Teutonic nations of the West with as distinct a rejection of the circular and domical forms, except in so far as an Eastern people still were mixed up with them. Thus in Italy both continued long to be used, the one as a baptistery, the other as a church, but always distinct as in Rome. In France they were so completely fused into one that it requires considerable knowledge of architectural analysis to separate them again into their component parts. In England we rejected the circular form altogether, and so they did in Germany, except when under French influence. Each race reclaimed its own among the spoils of Rome, and used it with the improvements it had acquired during its employment in the imperial city.

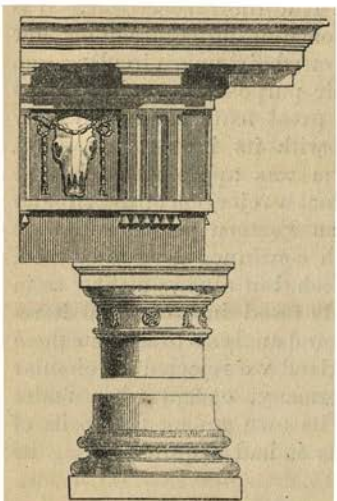
ORDERS.

The first thing that strikes the student in attempting to classify the objects of Roman architecture is the immense variety of their application, as compared with other styles. In Egypt there are only palaces and tombs. In Greece architecture was almost wholly confined to temples and theatres; in Etruria to tombs. In Rome we have temples, basilicas, theatres and amphitheatres, baths, palaces, tombs, arches of triumph and pillars of victory, gates, bridges, and aqueducts, all equally objects of architectural skill. The best of these, in fact, are those which other countries neglected. They would have been noble works indeed had it not been that the Romans sought to apply to them the orders and details which were meant only for the temples in other nations. In the time of Constantine these orders were nearly dying out, or were at least reduced to mere subordinate ornaments. The next step would have been their entire abolition, when the Roman would have been a new and complete style; but, as before remarked, this last step was denied them, and the orders therefore are still an essential part of Roman art. These are most important in the age of Augustus, and gradually die out as we approach that of Constantine.

THE DORIC.

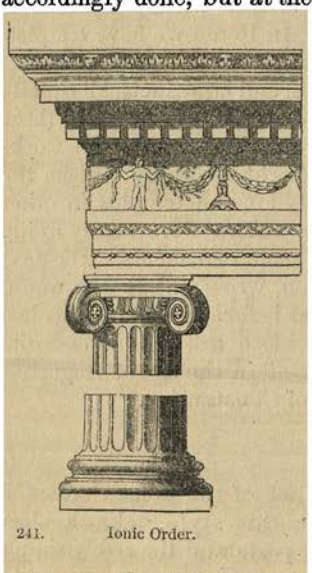
Adopting the usual classification, the first of the Roman orders is the Doric, which, like everything else in this style, takes a place about half-way between the Tuscan wooden posts and the nobly simple order of the Greeks. It no doubt was a great improvement on the former, but for monumental purposes infinitely inferior to the latter. It was, however, more manageable; and for forums or court-yards, or

as a three-quarter column between arcades, it was better adapted to their purposes than the severer Greek, which, when so employed, not only loses almost all its beauty, but becomes more unmeaning than the Roman. This was apparently felt; for there is not, so far as I know, a single Doric temple throughout the Roman world; and it would in consequence be most unfair to institute a comparison between a mere utilitarian prop and an order which the most refined artists in the world spent all their ingenuity in rendering the most perfect of architectural objects.



240. Doric Order.

The addition of an independent base made the order much more generally useful, and its adoption brought it much more into harmony with the other two orders, which seems to have been the principal object of its introduction. The key-note of Roman architecture was the Corinthian order; and as, from the necessities of their tall many-storied buildings, they were forced to use the three orders together, often one over the other, it was indispensable that the three should be reduced to something like harmony. This was accordingly done, but at the expense of the Roman Doric order, which, except when thus used in combination, must be confessed to have very little claim to our admiration.



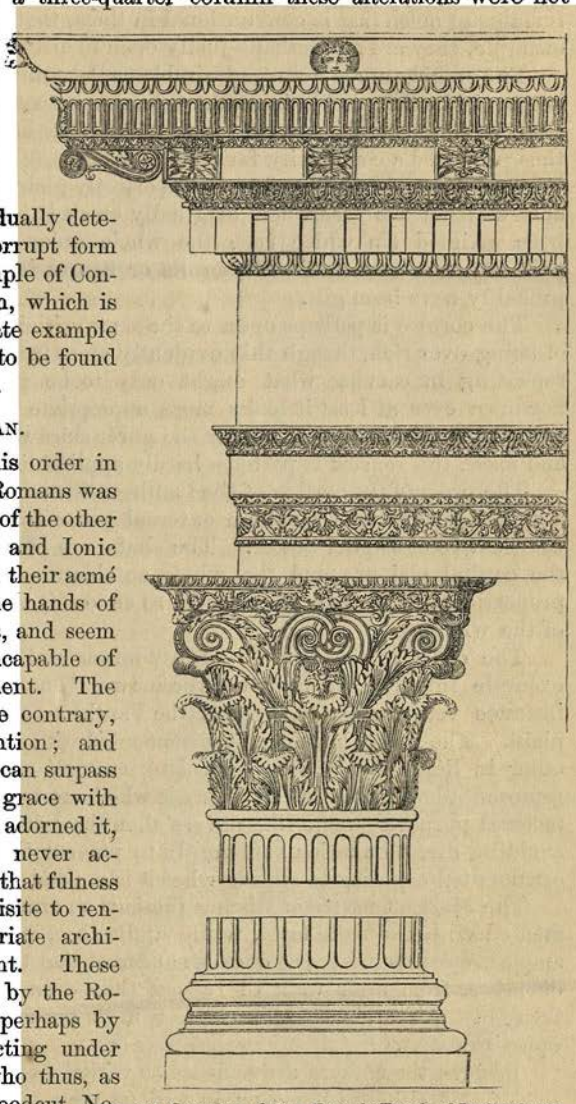
241. Ionic Order.

Ionic.

The Romans were much more unfortunate in their modifications of the Ionic order than in those which they introduced into the Doric. They never seem to have either liked or understood it, nor to have employed it except as a *mezzo termine* between the other two. In its own native East this order had originally only been used in porticos between piers or *antæ*, where of course only one face was shown, and there were no angles to be turned. When the Greeks adopted it they used it in temples of Doric form, and in consequence were obliged to introduce a capital at each angle, with two voluted faces in juxtaposition at right angles to one another. When the Romans took it up, impatient of control, they turned all the volutes angularly, making them mere horns, and destroying all the

meaning and all the grace of the order. This was not effected at once, but was the result of a great many attempts to get over the difficulties inherent in the employment of this order.

When used as a three-quarter column these alterations were not required, and then the order looked more like what it originally was; but even in this state it was never equal to the Greek examples, and gradually deteriorated to the corrupt form as seen in the Temple of Concord in the Forum, which is the most degenerate example of the order now to be found in Roman remains.



242. Corinthian Order. From the Temple of Jupiter Stator.

CORINTHIAN.

The fate of this order in the hands of the Romans was different from that of the other two. The Doric and Ionic orders had reached their acmé of perfection in the hands of the Grecian artists, and seem to have been incapable of further improvement. The Corinthian, on the contrary, was a recent invention; and although nothing can surpass the elegance and grace with which the Greeks adorned it, this new capital never acquired with them that fulness and strength requisite to render it an appropriate architectural ornament. These were added to it by the Romans, or rather perhaps by Grecian artists acting under their direction, who thus, as shown in the woodcut No. 242, produced a column which for richness combined with proportion and architectural fitness has hardly been surpassed. The base is elegant and appropriate; the shaft is of the most pleasing proportion, and the fluting gives it just the requisite degree of richness and no more; and the capital, though bordering on

over-ornamentation, is so well arranged as to appear just suited to the work it has to do. The acanthus-leaves, it is true, go to the very verge of that degree of direct imitation of nature which is allowable in architectural ornaments; but they are disposed so formally, and there still remains so much that is conventional in them, that, though an extreme example, they are not perhaps justly open to criticism on this account.

The entablature is not so admirable as the column. The architrave is too richly carved. It is evident, however, that this arose from the artist having copied in carving what the Greeks had only painted, and thus produced a complexity far from pleasing.

The frieze, as we now find it, is perfectly plain; but this undoubtedly was not the case when originally erected. It either must have been painted (in which case the whole order of course was also painted), or ornamented with scrolls or figures in bronze, which may probably have been gilt.

The cornice is perhaps open to the same criticism as the architrave, of being over rich, though this evidently arose from the same cause, of repeating in carving what ought only to be painted; and to our northern eyes at least it looks more appropriate for internal than for external architecture, but, under the purer skies where it was invented and used, this remark is perhaps hardly applicable.

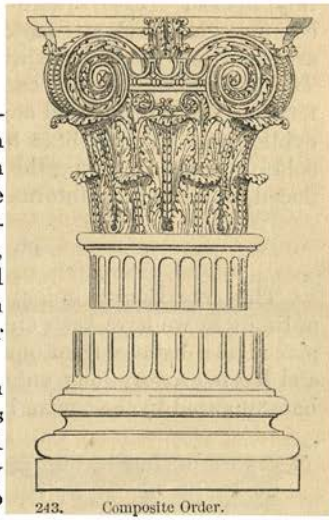
The order of the portico of the Pantheon is, according to our notions, a nobler specimen of what an external pillar should be than that of the Temple of Jupiter Stator. The shafts are of one block, unfluted; the capital plainer; and the whole entablature, though as correctly proportional, is far less ornamented, so as to suit the greater simplicity of the whole.

The order of the Temple of Antoninus and Faustina is another example intermediate between these two. The columns are in this instance very similar to those of the Pantheon, and the architrave is plain. The frieze, however, is ornamented with more taste than any other in Rome, and is a very pleasing example of those conventional representations of plants and animals which are so well suited to architectural purposes—more like nature than those of the Greeks, but still avoiding direct imitation sufficiently to prevent the affectation of the ornament pretending to appear what it is not and cannot be.

The Maison Quarrée at Nismes presents an example of a frieze ornamented with exquisite taste, while at Baalbec, and in some other examples, we have friezes so over-ornamented that the effect is far more offensive, from utter want of repose, than even the baldness of the frieze of the Temple of Jupiter Stator in its present state is, from the opposite extreme.

Besides these there are at least 50 varieties of Corinthian capitals to be found either in Rome or in various parts of the Roman Empire, all executed within the three centuries during which Rome continued to be the Imperial city. Some of these are remarkable for an elegant simplicity, evidently betraying the hand of a Grecian artist, but some of them show a lavish exuberance of ornament, too characteristic of Roman art in general. Many of them contain, however, the germs of

something better than was accomplished in that age; and a collection of them would afford more useful suggestions for designing capitals than have yet been available to modern artists.

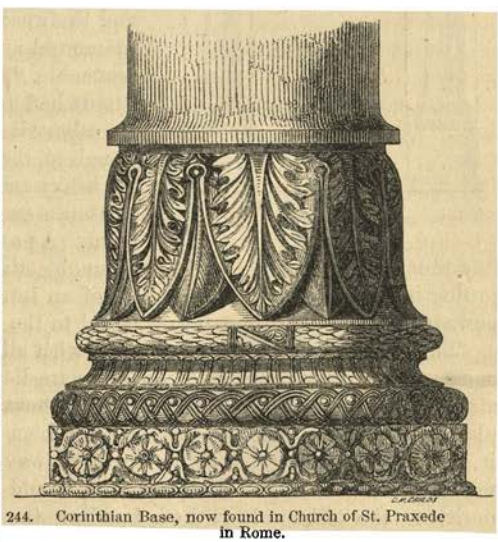


243. Composite Order.

COMPOSITE ORDER.

Among their various attempts to improve the order which has just been described, the Romans hit upon one which is extremely characteristic of their whole style of art. This is known by the distinguishing name of the Composite order, though virtually it is more like the typical examples of the Corinthian order than many of those classed under the latter denomination.

The greatest defect of the Corinthian capital is the weakness of the small volutes supporting the angles of the abacus. A true artist would have remedied this by adding to their strength, and carrying up the fulness of the capital to the top. The Romans removed the whole of the upper part, and substituted an Ionic capital instead. Their only original idea, if it may be so called, in art, was that of the putting two dissimilar things together to make one which should combine the beauties of both, though in fact the one only serves to destroy the other. In the Composite capital they never could hide the junction; and consequently, though rich and in some respects an improvement on the order out of which it grew, this capital never came into general use, and has seldom found favour except amongst the blindest admirers of all that the Romans did.



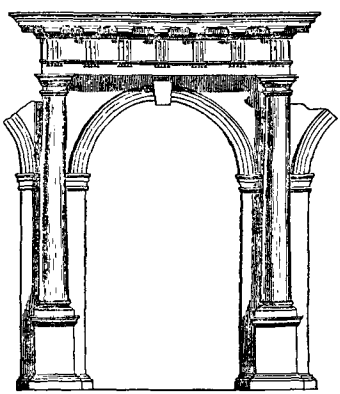
244. Corinthian Base, now found in Church of St. Praxede in Rome.

In the latter days of the Empire the Romans attempted another innovation which promised far better success, and with very little more elaboration would have been a great gain to the principles of architectural design. This was

the introduction of the Persian or Assyrian base, modified to suit the details of the Corinthian or Composite orders. If they had always used this instead of the square pedestals on which they mounted their columns, and had attenuated the pillars slightly when used with arcades, they would have avoided many of the errors they fell into. The invention, however, came too late to be generally used; and the forms already introduced continued to prevail. At the same time it is evident that a Persepolitan base for an Ionic and even for a Corinthian column would be among the greatest improvements that could be introduced, especially for internal architecture.

Composite Arcades.

The true Roman order, however, was not any of these columnar ordinances we have been enumerating, but an arrangement of 2 pillars placed at a distance from one another nearly equal to their own height, and having a very long entablature, which in consequence required to be supported in the centre by an arch springing from piers. This, as will be seen from the annexed woodcut, was in fact merely a screen of Grecian architecture placed in front of a construction of Etruscan design. Though not without a certain richness of effect, still, as used by the Romans, these two systems remain too distinctly dissimilar for the result to be pleasing, and their use necessitated certain supplemental arrangements by no means agreeable. In the first place, the columns had to be mounted on pedestals, or otherwise an entablature proportional to their size would have been too heavy and too important for a thing so useless and so avowedly a mere ornament. A projecting key-stone was also introduced into the arch. This was unobjectionable in itself, but, when projecting so far as to do the duty of an intermediate capital, it overpowered the arch without being equal to the work required of it.



245. Doric Arcade.

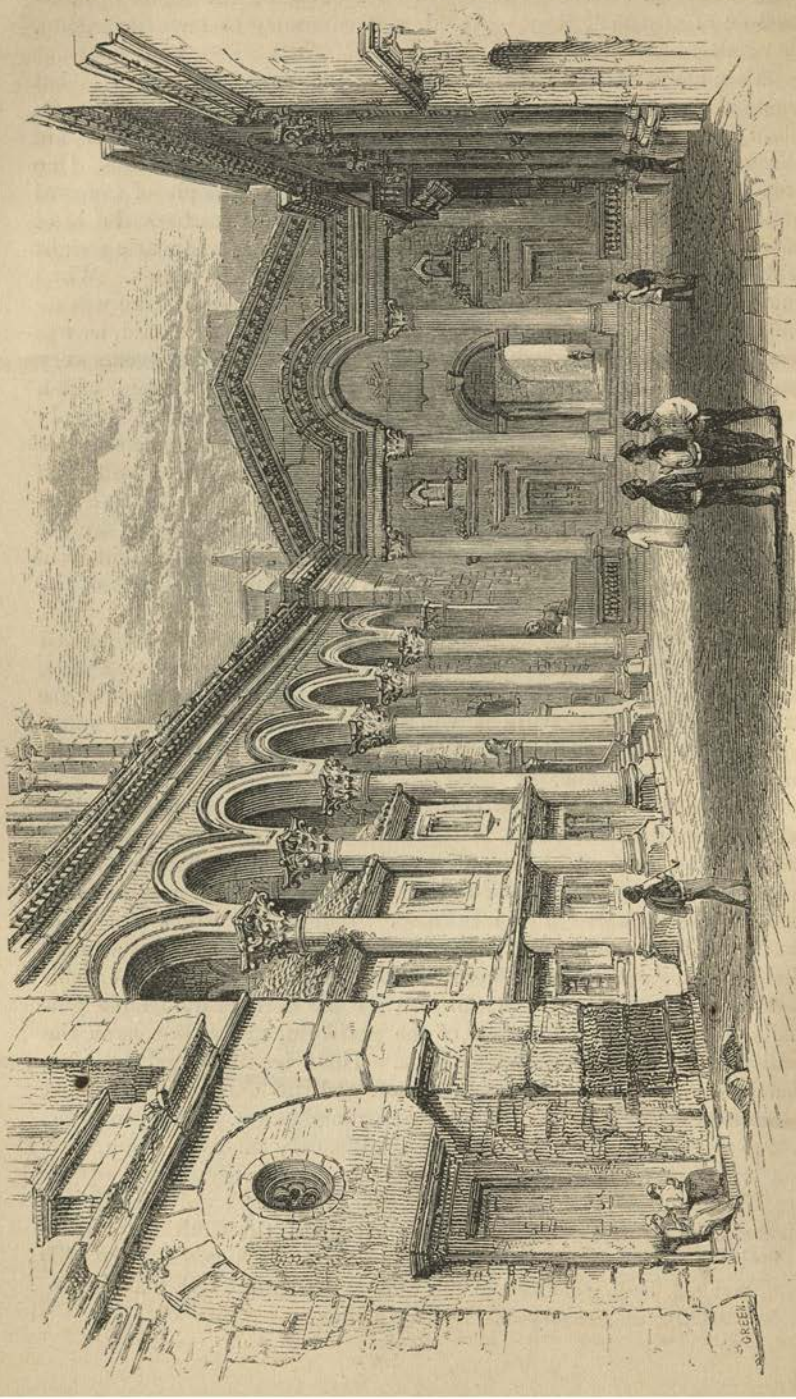
The Romans used these arcades with all the 3 orders, frequently one over the other, and tried various expedients to harmonise the construction with the ornamentation, but without much effect. They seem always to have felt the discordance as a blemish, and at last got rid of it, but whether they did so in the best way is not quite clear. The most obvious mode of effecting this would no doubt have been by omitting the pillars altogether, bending the architrave, as is usually done, round the arch, and then inserting the frieze and cornices into the wall, using them as a string-course. A slight degree of practice would soon have enabled them—by panelling the pier, cutting off its

angles, or some such expedient—to have obtained the degree of lightness or of ornament they required, and so really to have invented a new order.

This, however, was not the course that the Romans pursued. What they did was to remove the pier altogether, and to substitute in its place the pillar taken down from its pedestal. This of course was not effected at once, but was the result of many trials and expedients. One of the earliest of these is observed in the Ionic Temple of Concord before alluded to, in which a concealed arch is thrown from the head of each pillar, but above the entablature, so as to take the whole weight of the superstructure from off the cornice between the pillars. When once this was done it was perceived that so deep an entablature was no longer required, and that it might be either wholly omitted, as was sometimes done, in the centre intercolumniation, or at all events very much attenuated. There is an old temple at Talavera in Spain, which is a good example of the former expedient; and the Church of the Holy Sepulchre, built by Constantine at Jerusalem, is a remarkable example of the latter. There the architrave is cut off so as merely to form a block over each of the pillars, and the frieze and cornice only are carried across from one of these blocks to the other, while a bold arch is thrown from pillar to pillar over these, so as to take any weight from off a member which has at last become a mere ornamental part of the style.

In the preceding reign we find all these changes already introduced into domestic architecture, as shown in the woodcut on the next page, representing the great court of Diocletian's palace at Spalatro, where at one end the entablature is wholly omitted for the central intercolumniation, and at the sides the arches spring directly from the capitals of the columns.

Had the Romans at this period been attempting to improve their external architecture, there is little doubt but that they would have adopted the expedient of the entire omission of the entablature; but at this time almost all their efforts were devoted to internal improvement, often at the expense of the exterior. Indeed the whole history of Roman art, from the time of Augustus to that of Constantine, is a transition from the external architecture of the Greeks to the internal architecture of the Christians. At first we see the cells of the temple gradually enlarged at the expense of the peristyle, and at last, as in the Pantheon, entirely overpowering them. Their basilicas and halls become more important than their porticos, and the exterior is in almost every instance sacrificed to the internal arrangements. For an interior, an arch resting on a circular column is obviously far more appropriate than one resting on a pier. Externally, on the contrary, the square pier is most suitable, because a pillar cannot support a wall of sufficient thickness. This defect was not remedied until the Gothic architects devised the plan of coupling two or more pillars together; but this point had not been reached at the time when Rome fell, and all progress in art was effectually checked for a time.



View of Court-yard at Spalatro. From Sir Gardner Wilkinson's Dalmatia.

246.

TEMPLES.

There is perhaps nothing that strikes the inquirer into the architectural history of the Imperial city more than the extreme insignificance of her temples, as compared with the other buildings of Rome itself, and with some temples found in the provinces. The only temple which remains at all worthy of such a capital is the Pantheon. All others are now mere fragments, from which we can hardly restore even the plans of the buildings, much less judge of their effect. We have now no means of judging what the great national temple of the Capitoline Jove may have been, no trace of it, nor any intelligible description, having been preserved to the present time. Its being of Etruscan origin, and retaining its original form to the latest day, would lead us to suppose that the temple itself was small, and its magnificence, if any, confined to the enclosure and to the substructure, which may have been immense.

Of the Augustan age we have nothing but the remains of 3 temples, consisting of only 3 columns of each; and the excavations that have been made around them have not sufficed to make even their plans tolerably clear.

The most beautiful was that of Jupiter Stator in the Forum, the beauty of whose details has been already alluded to and described. This temple was octastyle in front. It was raised on a stylobate 22 ft. in height, whose extreme width was 98 ft., which corresponds as closely as possible with 100 Roman ft. The angular columns are 85 ft. from centre to centre. The height of the pillars was 48 ft., and that of the entablature 12 ft. 6 in.[1] It is probable that the whole height to the apex of the pediment was nearly equal to the extreme width, and meant to be so.

The pillars certainly extended on both flanks, and generally it is restored as peristylar, but I believe without any authority. From the analogy of the other temples it seems more probable that there were not more than 8 or 10 pillars on each side, and that the apse of the cella formed the termination opposite the portico.

The temple nearest to this in situation and style is that of Jupiter Tonans.[2] The order in this instance is of slightly inferior dimensions to that of the temple just described, and of very inferior execution. The temple too was very much smaller, having only 6 columns in front, and from its situation it could not well have had more than that number on the flanks, so that its extreme dimensions were probably about 70 ft. by 85 ft.

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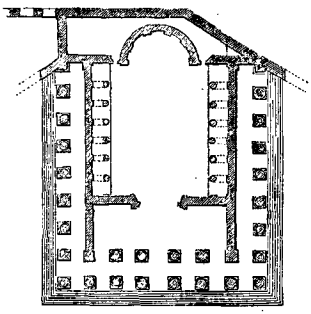
[1] These dimensions, with all those that follow, unless otherwise specified, are taken from Taylor and Cresy's 'Architectural Antiquities of Rome,' London, 1821. They seem more to be depended upon than any others I am acquainted with.

[2] These two temples, like almost all the others of Rome, have recently been re-named by the Roman or rather German antiquarians. The Jupiter Tonans is now the Temple of Saturn, and the Jupiter Stator is decreed to have been a Temple of Minerva. I have preferred the names by which they are currently known, as the architecture is of more importance here than the archæology.

The third is the Temple of Mars Ultor, of which a plan is annexed; for though now as completely ruinous as the other two, in the time of Ant. Sabacco and Palladio there seem to have been sufficient remains to justify a restoration. As will be seen, it is nearly square in plan (112 ft. by 120). The cella is here a much more important part than is usual in Greek temples, and terminates in an apse, which afterwards became characteristic of all places of worship. Behind the cella, and on each side, was a lofty screen of walls and arches, part of which still remain, which certainly formed quite a new adjunct to anything we know of in a temple form.



247. Temple of Mars Ultor. From Creasy's Rome.

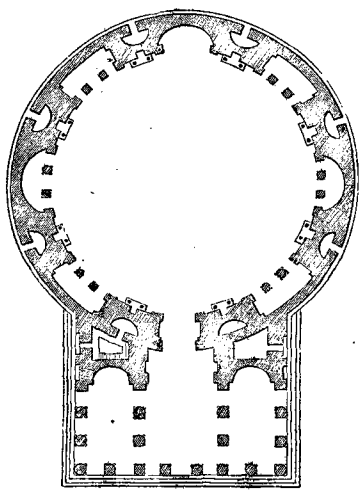
The next class of temples, called pseudo-peripteral (or those in which the cella occupies the whole of the after part), are generally more modern, certainly more completely Roman, than these last. One of the best specimens at Rome is the Temple of Antoninus and Faustina, a small building measuring 72 ft. by 120. There is also a very elegant small Ionic temple of this class called that of Fortuna Virilis; and the Ionic Temple of Concord, built by Vespasian, above alluded to, seems also to have been of this class. So was the temple in the forum at Pompeii; but the finest specimen now remaining to us is the so-called Maison Quarrée at Nîmes, which is indeed one of the most elegant temples of the Roman world, owing probably a great deal of its beauty to the taste of the Grecian colonists long settled in its neighbourhood. It is hexastyle, with 11 columns in the flanks, 3 of which stand free, and belong to the portico; the remaining 8 are attached to the walls of the cella. The temple is small, only 45 ft. by 85; but such is the beauty of its proportions and the elegance of its details that it strikes every beholder with admiration.

The date of this temple has not been satisfactorily ascertained. From the nail-holes of the inscription on the frieze it has been attempted to make out the names of Caius and Lucius Cæsar, but it much more probably belongs to the time of Trajan or of Hadrian, when Nîmes was in the height of its prosperity.

Not far from the Colosseum, in the direction of the forum, are still to be seen the remains of a great double temple built by the Emperor Hadrian, and dedicated to Venus and Rome. Nothing of this is now to be found but the remains of the 2 cells, each about 70 ft. square, covered with tunnel vaults, and placed back to back, so that their apses touch one another. These stand on a platform 480 ft. long by 330 wide; and it is generally supposed that on the edge of this stood 56 great columns, 65 ft. in height, thus moulding the whole into one great peripteral temple. Some fragments of such pillars are said to be found in the neighbourhood, but not one erect,—not even a base in its place,—nor can any of its columns be traced as transported to any

other buildings; so that I am afraid this part of the arrangement is very problematical, and I should be rather inclined to restore it, as Palladio and the older architects have done, with a corridor of 10 small columns in front of each of the cells. If we could assume the plan of this temple to have been really peripteral, as supposed, it must have been a building worthy of the Imperial city, and of the magnificence of the emperor to whom its erection is ascribed.

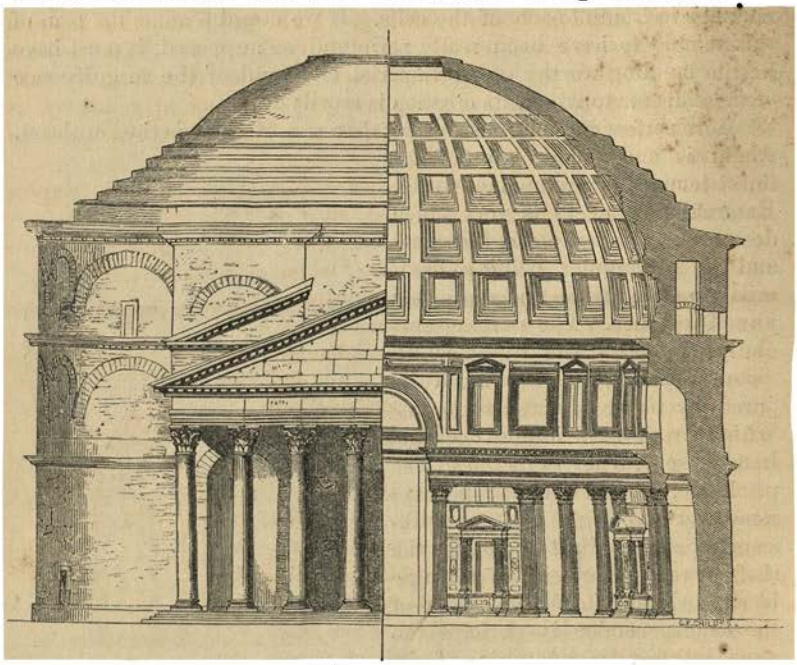
More perfect and more interesting than any of these is the Pantheon, which is undoubtedly one of the finest temples of the ancient world. Externally its effect is very much destroyed by its two parts, the round and the rectangular, being so dissimilar in style and so incongruously joined together. The portico especially, in itself the finest which Rome exhibits, is very much injured by being prefixed to a mass which overpowers it and does not harmonise with any of its lines. The pitch, too, of its pediment is perhaps somewhat too high, but, notwithstanding all this, its 16 columns, the shaft of each composed of a single block, and the simple grandeur of the details, render it perhaps the most satisfactory example of its class.



248. Plan of Pantheon at Rome. Scale 100 ft. to 1 in.

The pillars are disposed in the Etruscan fashion, and it is probable that originally they formed the portico to a 3-celled temple. The portico, as we know, not only from the inscription, but from the style, belongs to the age of Augustus, and it is generally supposed that it was at that time added by Agrippa to the pre-existing rotunda. I feel convinced that the contrary was the case, and that the rotunda is very much more modern than the portico. We know from history that the building was frequently damaged by fire, and restored first by Hadrian and afterwards by Septimius Severus in the year A.D. 202. If the interior of the building, as originally erected, consisted of rectangular cells of the Etruscan form, constructed of wood—at any rate with a wooden roof—which I believe to have been the case, such disasters were not only possible, but probable; but no fire could damage such a building as we now find. Besides this, we know of no attempt at vaulting on anything like such a scale as this in the Augustan age, and the temples at that time all affected the Greek peristylar form. Thenceforward the cells were gradually enlarged, and gradually, too, the exterior was sacrificed to the interior, which characteristics are here carried to excess. Besides this, the masonry of the rotunda is full of useless discharging arches, and shows other peculiarities of the latest age. All these considerations put together would incline me to place

it very near the age of Constantine, could I find any trace of a later restoration than that above alluded to; but, under any circumstances, I do not think it can have been erected before the age of Hadrian.



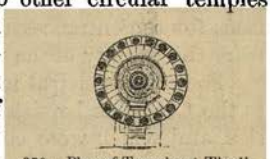
249. Half Elevation, half Section, of the Pantheon at Rome. Scale 50 ft. to 1 in.

Internally perhaps the greatest defect of the building is a want of height in the perpendicular part, which the dome appears to overpower and crush. This mistake is aggravated by this lower part being cut up into two stories, an attic being placed over the lower order. The former defect may have arisen from the architect wishing to keep the walls in some proportion to the portico. The latter is a peculiarity of the age in which I suppose this temple to have been erected, when two or more stories seem to have become indispensable requisites of architectural design. We must ascribe also to the practice of the age the method of cutting through the entablature by the arches of the great niches, as shown in the sectional part of the last woodcut. It has already been pointed out that this was becoming a characteristic of the style at the time when the circular part of this temple appears to have been erected.

Notwithstanding these defects and many others of detail that might be mentioned, there is a grandeur and a simplicity in the proportions of this great temple that render it still one of the very finest and most sublime interiors in the world; and though it is deprived of its bronze covering and of the greater part of those ornaments on which it mainly depended for effect, and though these have been replaced by tawdry

and incongruous modernisms, still nothing can destroy the effect of a design so vast and of a form so simply grand. It possesses another element of architectural sublimity in having only one window, and that placed high up in the building. I know of no other temples which possess this feature except the great rock-cut Buddhist basilicas of India. In them the light is introduced even more artistically than here; but, nevertheless, that one great eye opening upon heaven is by far the noblest conception for lighting a building to be found in Europe.

Besides this great rotunda there are two other circular temples in or near Rome. The one, at Tivoli, shown in plan and elevation in the annexed wood-cuts (Nos. 250 and 251), has long been known and admired; the other, near the mouth of the Cloaca Maxima, has a cell surrounded by 20 Corinthian columns of singularly slender proportions. Both these probably stand on Etruscan sites, and certainly were Etruscan in form, and probably sacred to Pelasgic deities, either Vesta or Cybele.

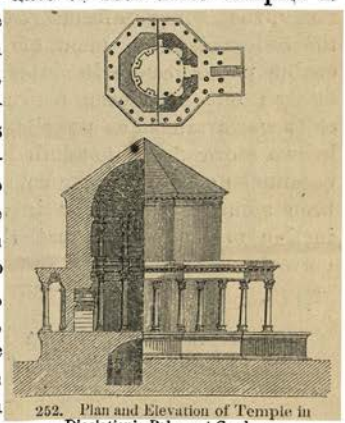


250. Plan of Temple at Tivoli. Scale 100 ft. to 1 in.

251. Restored Elevation of Temple at Tivoli. Scale 50 ft. to 1 in.

Both in dimensions and design they form a perfect contrast to the Pantheon, as might be expected from their both belonging to the Augustan age of art: consequently the cella is small, its interior unornamented, and all the art and expense lavished on the external features, especially the peristyle, show more strongly than even the rectangular temple the still remaining predominance of Grecian taste, which had disappeared before the erection of the Pantheon.

It is to be regretted that the exact date of both these temples is unknown, for, as that at Tivoli shows the stoutest example of a Corinthian column known, and that in Rome the slenderest, it might lead to some important deductions if we could be certain which was the older of the two. It may be, however, that this difference of style has no connexion with the relative age of the two buildings, but that it is merely an instance of the good taste of the age to which they belong. The Roman example, being placed in a low and flat situation, required all the height that could be given it; that at Tivoli, being placed on the edge of a rock, required as much solidity as the order would admit of to prevent its looking poor and insecure. A Gothic or a Greek architect would certainly have made this distinction.



252. Plan and Elevation of Temple in Diocletian's Palace at Spalatro. Scale for Plan 100 ft. to 1 in.; for Elevation 50 ft. to 1 in.

One more step towards the modern style of round temples was taken before the fall of the Western Empire, in the temple which Diocletian built in his palace at Spalatro. Internally the temple is circular, 28 ft. in diameter, and the height to the dome, or perpendicular part, is about equal to its width. This is a much more pleasing proportion than we find in the Pantheon, perhaps the very best that has yet been employed. Externally the building is an octagon, surrounded by a low dwarf peristyle, very unlike that employed in the older examples. This angularity is certainly a great improvement, giving expression and character to the building, and affording flat faces for the entrances or porches; but the peristyle is too low, and mars the dignity of the whole.[1]

To us its principal interest resides in its being so extremely similar to the Christian baptisteries which were erected in the following centuries, and which were copies, but very slightly altered, from buildings of this class.

Athens.

Even assuming that Hadrian completed the great temple of Venus and Rome in the manner generally supposed, it must have been very far surpassed by the great temple of Jupiter Olympius at Athens, which, though probably not entirely erected, was certainly finished, by that emperor. It was decastyle in front, with a double range of 20 columns on each flank, so that it could not well have had less than 120 columns, all about 58 ft. in height, and of the most elegant Corinthian order, presenting a group of more extended magnificence than any other temple we are acquainted with of its class in the ancient world. Its lineal dimensions also, as may be seen from the plan (woodcut No. 222), were unrivalled, as it was 171 ft. wide by 354 in length, or, as nearly as may be, the same as those of the great Hypostyle Hall at Karnac, from which, however, it differs most materially, that being an interior, this depending for all its magnificence on the external arrangement of its columns. Nothing now remains to enable us to restore its internal arrangement with anything like certainty; but there seems reason to believe that the outer part of the cella was arranged as a peristylar court open in the centre, probably in two stories, so as to admit light into the interior. This arrangement became so common in the early Christian world that there must have been some precedent for it which, besides other reasons,[2] strongly incline me to believe that the arrangement shown in the plan is correct.

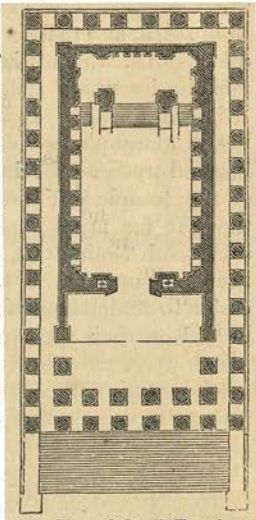
Baalbec.

The temples of Palmyra and Kangovar have been already mentioned in speaking of that of Jerusalem, to which class they seem to

[1] This building is commonly called a temple, though it is not known to what deity it was dedicated. My own impression is that it was a tomb, or at least a funeral monument of some sort.

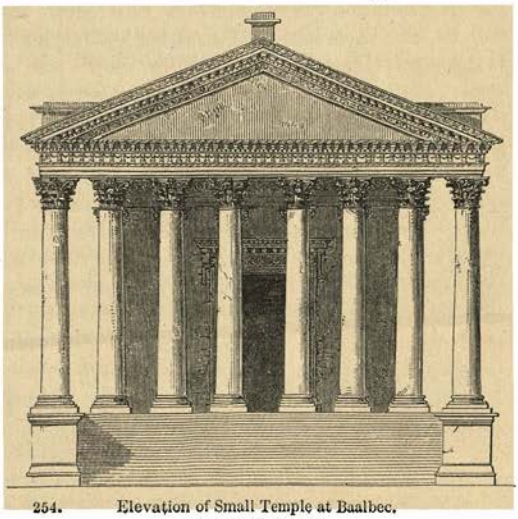
[2] See 'True Principles of Beauty in Art,' p. 392, where the reasons for this arrangement will be found stated at length.

belong in their general arrangements, though their details are borrowed from Roman architecture. This, however, is not the case with the temples at Baalbec, which, taken together and with their accompaniments, form the most magnificent temple group now left to us of their class and age. The great temple, if completed (which, however, it probably never was), would have been about 160 ft. by 290, and therefore only inferior to that of Jupiter Olympius at Athens. Only 9 of its colossal columns are now standing, but the bases of most of the others are *in situ*. Scarcely less magnificent than the temple itself was the court in which it stood, above 380 ft. square, and surrounded on 3 sides by recessed porticos of most exuberant richness, though perhaps rather questionable taste. In front of this was a hexagonal court of very great beauty, with a noble portico of 12 Corinthian columns, with 2 square blocks of masonry at each end. The whole extent of the portico is 260 ft., and of its kind it is perhaps unrivalled, certainly among the buildings of so late a date as the period to which it belongs.



253. Plan of Small Temple at Baalbec. Scale 100 ft. to 1 in.

The other, a smaller temple, stands close to the larger. Its dimensions, to the usual scale, are shown in the plan (woodcut No. 253). It is larger than any of the Roman peripteral temples, being 117 ft. by 227 ft., or rather exceeding the dimensions of the Parthenon at Athens, and it is both wider and higher than the portico of the Pantheon at Rome. Had this portico been applied to that building, the slope of its pediment would have coincided exactly with that of the upper sloping cornice, and would have been the greatest possible improvement to that edifice. As it is, it certainly is the best proportioned and the most graceful Roman portico of the first class that remains to us in a state of sufficient completeness to allow us to judge of its effect.



254. Elevation of Small Temple at Baalbec. Scale 50 ft. to 1 in.

The interior of the cella was richly ornamented with niches and

pilasters, and covered with a ribbed and coffered vault, remarkable, like every part of this edifice, rather for the profusion than for the good taste of its ornaments.

One of the principal peculiarities of this group of buildings is, the immense size of some of the stones used in the substructure of the great temple: three of these average about 63 ft. in length, 10 ft. 5 in. in breadth, and 13 ft. in height. A fourth is lying in the quarry of similar dimensions, which it is calculated must weigh alone more than 1100 tons in its rough state, or nearly as much as one of the tubes of the Britannia bridge. It is not easy to see of what use such masses were; but in many places in the Bible and in Josephus nothing is so much insisted upon as the immense size of the stones used in the building of the temple and the walls of Jerusalem, which seems to have been thought far more important than the architecture. It probably was some such feeling that led to their employment here, though, had they been set upright as the Egyptians would have done, it would be easier to understand why so great an expense should have been incurred on their account.

CHAPTER IV.

BASILICAS, THEATRES, AND BATHS.

CONTENTS.

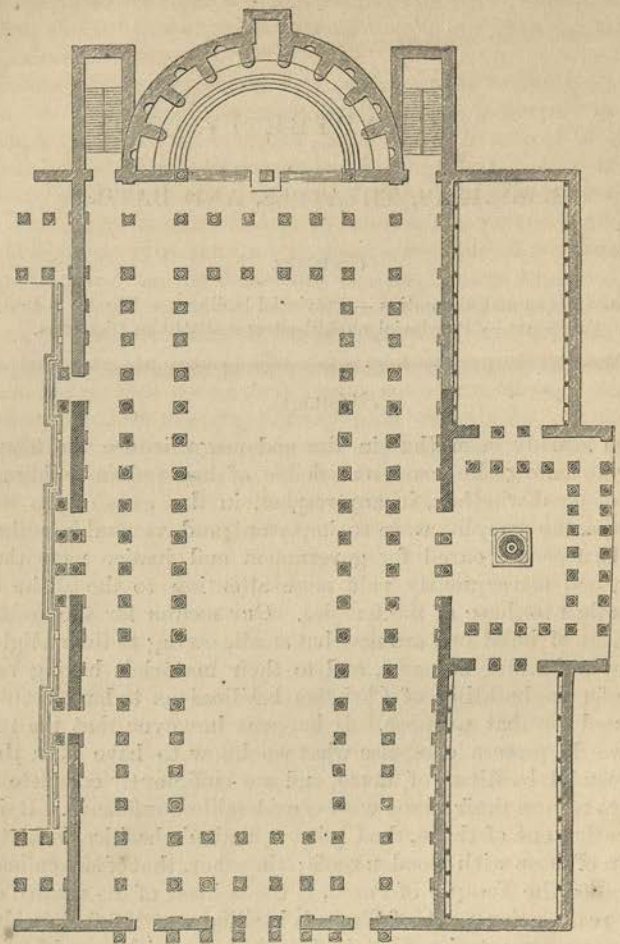
Basilicas of Trajan and Maxentius — Provincial basilicas — Theatre at Orange — Colosseum — Provincial amphitheatres — Baths of Diocletian.

BASILICAS.

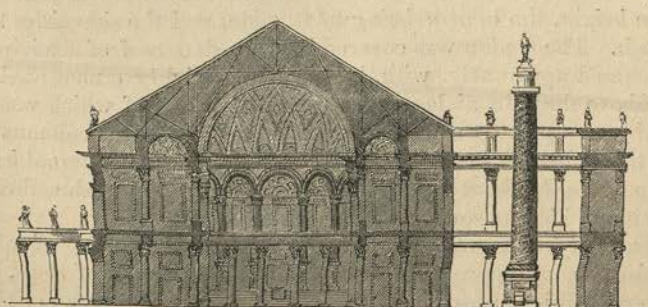
WE have already seen that in size and magnificence the temples of Rome were among the least remarkable of her public buildings. It may be doubted whether, in any respect, in the eyes of the Romans themselves, the temples were as important and venerable as the basilicas. That people cared for government and justice more than for religion, and consequently paid more attention to the affairs of the basilicas than to those of the temples. Our means for the restoration of this class of buildings are now but small, owing to their slight construction in the first instance, and to their materials having been so suitable for the building of Christian basilicas as to have been extensively used for that purpose. It happens however that the remains which we do possess comprise what we know to have been the two most splendid basilicas of Rome, and are sufficiently complete to enable us to restore their plans with considerable confidence. It is also fortunate that one of these, the Ulpian or Trajan's basilica, is the typical specimen of those with wooden roofs; the other, that of Maxentius, commonly called the Temple of Peace, is the noblest of the vaulted class.

The rectangular part of Trajan's basilica was 180 ft. in width and a little more than twice that in length, but, neither end having yet been excavated, its exact longitudinal measurement has not been ascertained. It was divided into 5 aisles by 4 rows of columns, each about 35 ft. in height, the centre being 87 ft. wide, and the side aisles 23 ft. 4 in. each. The centre was covered by a wooden roof of semicircular form, covered apparently with bronze plates richly ornamented and gilt. Above the side aisles was a gallery, the roof of which was supported by an upper row of columns. From the same columns also sprang the arches of the great central aisle. The total internal height was thus probably about 120 ft., or higher than any English cathedral, though not so high as some German and French ones.

At one end was a great semicircular apse, the back part of which was raised, being approached by a semicircular range of steps. In the centre of this platform was the raised seat of the quæstor or other magistrate who presided. On each side, upon the steps, were places



255. Plan of Trajan's Basilica at Rome. Scale 100 ft. to 1 in.



256. Section of Trajan's Basilica. Scale 100 ft. to 1 in.

for the assessors or others engaged in the business being transacted. In front of the apse was placed an altar, where sacrifice was performed before commencing any important public business.[1]

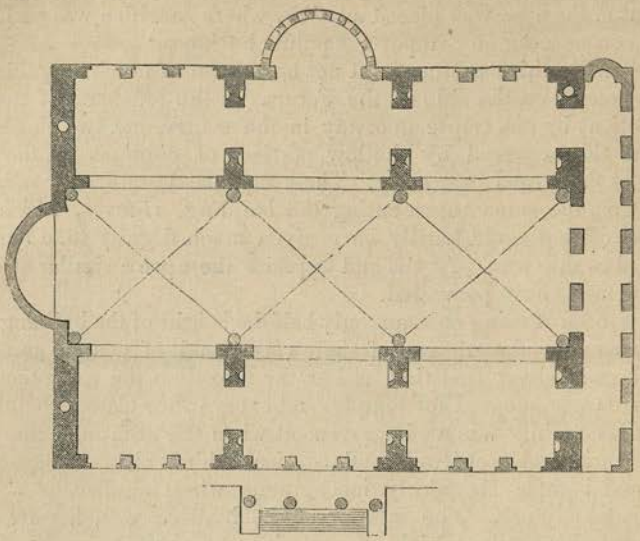
Externally this basilica could not have been of much magnificence. It was entered on the side of the Forum (on the left hand of the plan and section) by one triple doorway in the centre and two single ones on each side, covered by shallow porticos of columns of the same height as those used internally. These supported statues, or rather, to judge from the coins representing the building, rilievos, which may have set off, but could hardly have given much dignity to, a building designed as this was. At the end opposite the apse a similar arrangement seems to have prevailed.

This mode of using columns only half the height of the building must have been very destructive of their effect, and of general grandeur, but it became about this time rather the rule than the exception, and afterwards was adopted for temples and every other class of buildings, so that it certainly was an improvement when the arch took the place of the horizontal architrave and cornice, which always suggested a roof, and became singularly incongruous when applied as a mere ornamental adjunct. The interior of the basilica was, however, the important element to which the exterior was entirely sacrificed, this transition, which we have before alluded to, taking place much faster in basilicas, which were an entirely new mode of building, than in temples, whose form had become sacred from long tradition.

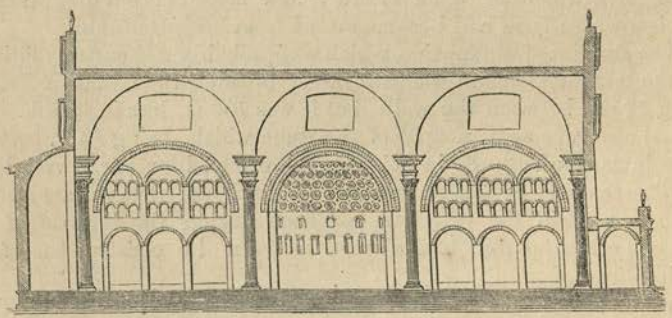
The Basilica of Maxentius, which was probably not entirely finished till the reign of Constantine, was rather broader than that of Trajan, being 195 ft. between the walls, but it was 100 ft. less in length. The central aisle was very nearly of the same width, being 83 ft. between the columns, and 120 ft. in height. There was, however, a vast difference in the construction of the two; so much so, that we are startled to see how rapid the progress had been during the interval of less than two centuries that had elapsed between the construction of the two basilicas.

In this building no pillars are used except 8 great columns in front of the piers, employed merely as ornaments, or as vaulting shafts were in Gothic cathedrals, to support in appearance, though not in construction, the springing of the vaults. The side aisles are roofed by 3 great arches, each 72 ft. in span, and the centre by an immense intersecting vault in 3 compartments. The form of these will be understood from the annexed sections, one taken longitudinally, the other across the building. As will be seen from them, all the thrusts are collected to a point and a buttress placed there to receive them: indeed almost all the peculiarities afterwards found in Gothic vaults are here employed on a far grander and more gigantic scale than the Gothic architects ever attempted; but at the same time it must be

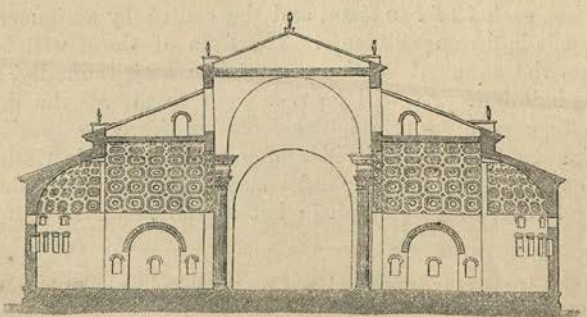
[1] This basilica is generally represented as having an apse at either end; but there is no authority whatever for this, and general analogy would lead us rather to infer that it was not the case.



257. Plan of Basilica of Maxentius. Scale 100 ft. to 1 in.



258. Longitudinal Section of Basilica of Maxentius. Scale 100 ft. to 1 in.

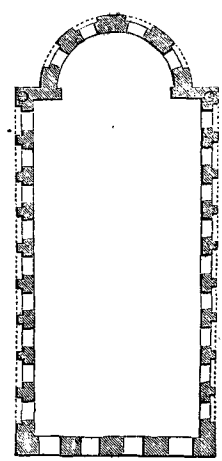


259. Transverse Section of Basilica of Maxentius. Scale 100 ft. to 1 in.

allowed that the latter, with smaller dimensions, often contrived by a more artistic treatment of their materials to obtain as grand an effect, and far more actual beauty, than ever were attained in the great transitional halls of the Romans. The largeness of the parts of the Roman buildings was indeed their principal defect, as in consequence of this they must all have looked smaller than they really were, whereas in all Gothic cathedrals the repetition and smallness of the component parts gives them the appearance of being larger than their real dimensions.

The roofs of these halls had one peculiarity which it would have been well if the mediæval architects had copied, inasmuch as they were all honestly used as roofs without the necessity of being covered with others of wood, as all Gothic vaults unfortunately were. It is true this is perhaps one of the causes of their destruction, for, being only covered with cement, the rain wore away the surface, as must be inevitably the case with any composition of the sort exposed horizontally to the weather, and, that being gone, the moisture soon penetrated through the crevices of the masonry, and the stability of the vault inevitably became impaired. Still some of these have in Rome resisted for 15 centuries all the accidents of climate and decay, while there is not a Gothic vault of half their dimensions that would exist for a century after the removal of its wooden protection. It therefore still remains a problem for modern times to construct a vault capable of resisting the destructive effects of exposure to the atmosphere. Until this is accomplished we must regard honest wooden roofs as preferable to the false stone ones which were such favourites in the middle ages.

The provincial basilicas of the Roman empire have nearly all perished, probably from their having been converted, first into churches, for which they were so admirably adapted, and then rebuilt to suit the exigencies and taste of subsequent ages. One example, however, still exists in Trèves of sufficient completeness to give a good idea of what such structures were. As will be seen by the annexed plan it consists of a great hall 90 ft. in width internally, and as nearly as possible twice that length. The walls are about 100 ft. in height and pierced with two rows of windows, but whether they were originally separated by a gallery or not is now by no means clear. At one end was the apse, rather more than a semicircle of 60 ft. in diameter. The floor of the apse was raised considerably above that of the body of the building, and was no doubt adorned by a hemicycle of seats raised on steps, with a throne in the centre for the judge. The building has been used for so many purposes since the time of the Romans, and has been so much altered, that it is not easy



260. Plan of the Basilica at Trèves.
Scale 100 ft. to 1 in.

now to speak with certainty of any of its minor arrangements. Its internal and external appearance, as it now stands, are well expressed in the annexed woodcuts; and, ruined though it appears, it is still

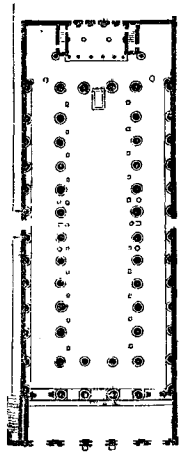
261. External View of the Basilica at Trèves.

the most complete example of a Roman basilica to be found anywhere out of the capital. A building of this description has been found at Pompeji, which may be considered a fair example of a provincial basilica of the second class. Its plan is perfectly preserved, as shown in the woodcut, No. 263. The most striking difference existing between it and those previously described is the square termination instead of the circular apse. It must however be observed that Pompeii was situated nearer to Magna Græcia than to Rome, and was indeed far more a Greek than a Roman city. Very slight traces of any Etruscan forms have been discovered there, and scarcely any buildings of the circular plan, which was so much in vogue in the capital. Though the ground-plan of this basilica remains perfect, the upper parts of this building are entirely destroyed, and we do not even know for certain whether the central part was roofed or not; my own impression is, however, that it certainly was so,

262. Internal View of the Basilica at Trèves.

and lighted by a clerestory like the cellæ of Greek temples; as, however, it had no peristyle, it may also have had windows in the upper gallery, and the clerestory windows were probably not countersunk like those in the Greek temples.

There is a small square building at Otricoli, which is generally supposed to be a basilica, but its object as well as its age is so uncertain that nothing need be said of it here. In the works of Vitruvius, too, there is a description of one built by him at Fano, the restoration of which has occupied the ingenuity of the admirers of that worst of architects. Even taking it as restored by those most willing to make the best of it, it is difficult to understand how anything so bad could have been erected in such an age.



263. Plan of Basilica at Pompeii. Scale 100 ft. to 1 in.

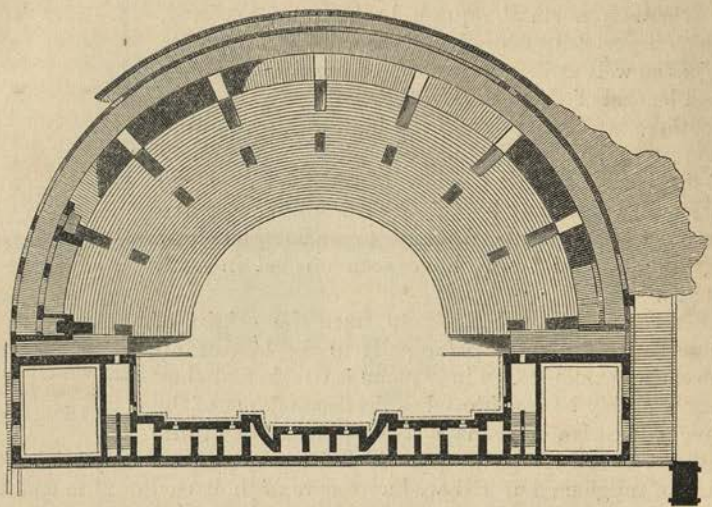
It is extremely difficult to trace the origin of these basilicas, owing principally to the loss of all the earlier examples. Their name is Greek, and they may probably be considered as the descendants of the Grecian Lesche, or perhaps as amplifications of the cellæ of Greek temples, appropriated to the purposes of justice rather than of religion; but till we know more of their earlier form and their antecedents, it is useless speculating on this point. The greatest interest to us arises rather from the use to which their plan was afterwards applied than from the source from which they themselves sprang. All the earlier Christian churches were copies, more or less exact, of the basilicas of which that of Trajan is an example. The abundance of pillars, suitable to such an erection, that were found everywhere in Rome, rendered their construction easy and cheap; and the wooden roof with which they were covered was also as simple and as inexpensive a covering as could well be designed. The very uses of the Christian basilicas at first were by no means dissimilar to those of their heathen originals, as they were in reality the assembly halls of the early Christian republic, before they became liturgical churches of the catholic hierarchy.

The more extensive construction of the bold vaults of the Maxentian basilica went far beyond the means of the early Church, established in a declining and abandoned capital, and this form therefore remained dormant for 7 or 8 centuries before it was revived by the mediæval architects on an infinitely smaller scale, but adorned with a degree of taste to which the Romans were strangers. It was then used with a completeness and unity which entitle it to be considered as an entirely new style of architecture.

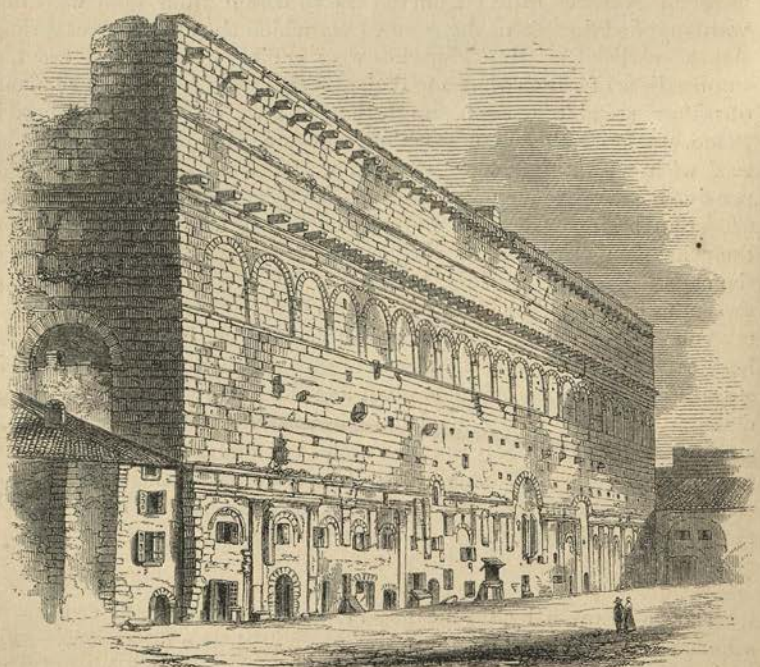
THEATRES.

The theatre was by no means so essential a part of the economy of a Roman city as it was of a Grecian one. With the latter it was quite as indispensable as the temple; and in the semi-Greek city of Her-

culaneum there was one, and in Pompeii two, on a scale quite equal to those of Greece when compared with the importance of the town itself. In the capital there appears only to have been one, that of Marcellus, built during the reign of Augustus. It is very questionable whether



264. Plan of the Theatre at Orange. Scale 100 ft. to 1 in.



265. View of the Theatre at Orange.

what we now see—especially the outer arcades—belong to that age, or whether the theatre may not have been rebuilt and these arcades added at some later period. It is so completely built over by modern houses, and so ruined, that it is extremely difficult to state anything positively about it. Its dimensions were worthy of the capital, the audience part being a semicircle of 410 ft. in diameter, and the scena being of great extent in proportion to the other part, which is a characteristic of all Roman theatres, as compared with Grecian edifices of this class.

One of the most striking Roman provincial theatres is that of Orange, in the south of France. Perhaps it owes its existence, or at all events its splendour, to the substratum of Grecian colonists that preceded the Romans in that country. Its auditorium is 340 ft. in diameter, but much ruined, in consequence of the princes of Orange having used this part as a bastion in some fortification they were constructing.

The stage is very tolerably preserved. It shows well the increased extent and complication of arrangements required for the theatrical representations of the age in which it was constructed, being a considerable advance towards the more modern idea of a play, as distinguished from the stately semi-religious spectacle in which the Greeks delighted. The noblest part of the building is the great wall at the back, an immense mass of masonry, 340 ft. in extent, and 116 ft. in height, without a single opening above the basement, and no ornament except a range of blank arches, about midway between the basement and the top, and a few projecting corbels to receive the footings of the masts that supported the velarium. Nowhere does the architecture of the Romans shine so much as when their gigantic buildings are left to tell their own tale by the imposing grandeur of their masses. Whenever ornament is attempted, their bad taste comes out. The size of their edifices, and the solidity of their construction, were only surpassed by the Egyptians, and not always by them; and when, as here, their mass stands unadorned in all its native grandeur, criticism is disarmed, and the spectator stands awe-struck at its majesty, and turns away convinced that truly "there were giants in those days." This is not, it is true, the most intellectual way of obtaining architectural effect, but it is the easiest and the most certain to secure the desired result.

AMPHITHEATRES.

The deficiency of theatres erected by the Romans is far more than compensated by the number and splendour of their amphitheatres, which, with their baths, may be considered as the true types of Roman art. It seems almost certain that they derived this class of public buildings from the Etruscans. At Sutri there is a very noble one cut out of the tufa rock, which was no doubt used by that people for festal representations long before Rome attempted anything of the kind. It is uncertain whether gladiatorial fights or combats of wild beasts formed any part of the amusements of the arena in those days,

though boxing, wrestling, and contests of that description certainly did; but whether the Etruscans actually proceeded to the shedding of blood and slaughter is more than doubtful.

Even in the remotest parts of Britain, in Germany, and Gaul, wherever we find a Roman settlement, we find the traces of their amphitheatres. Their soldiery, it seems, could not exist without the enjoyment of seeing men engage in doubtful and mortal combats—either killing one another, or torn to pieces by wild beasts. It is not to be wondered at that a people who delighted so much in the bloody scenes of the arena should feel but very little pleasure in the mimic sorrows and tame humour of the stage. It fitted them, it is true, to be a nation of conquerors, and gave them the empire of the world, but it brought with it feelings singularly inimical to all the softer arts, and was perhaps the great cause of their debasement.

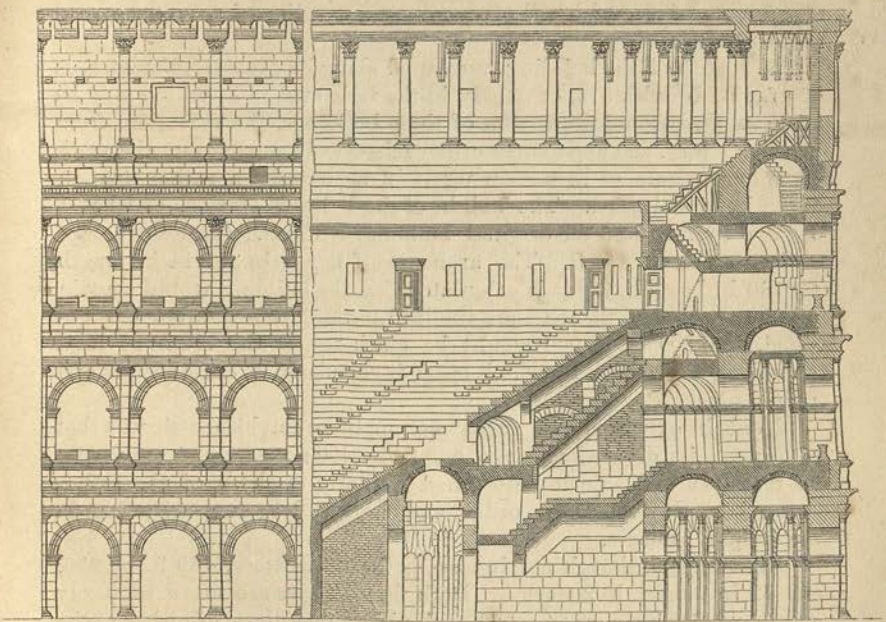
As might be expected, the largest and most splendid of these buildings is that which adorns the capital; and of all the ruins which Rome contains, none have excited such universal admiration as the Flavian amphitheatre. Poets, painters, rhapsodists, have exhausted all the resources of their arts in the attempt to convey to others the overpowering impression this building produces on their own minds. With the single exception, perhaps, of the Hall at Karnac, no ruin has met with such universal admiration as this. Its association with the ancient mistress of the world, its destruction, and the half-prophetic destiny ascribed to it, all contribute to this. Still it must be confessed that

> "The gladiators' bloody circus stands
> A noble wreck in ruinous perfection,"

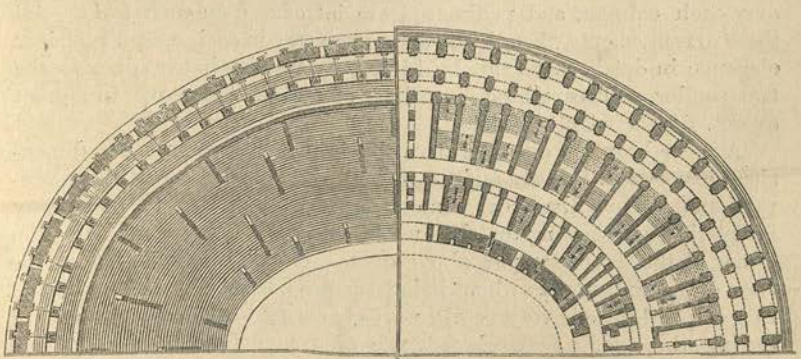
and worthy of all or nearly all the admiration of which it has been the object. Its interior is almost wholly devoid of ornament, or anything that can be called architecture—a vast inverted pyramid. The exterior does not possess one detail which is not open to criticism, and indeed to positive blame. Notwithstanding all this, its mass, its form, and its associations, all combine to produce an effect against which the critic struggles in vain. Still all must admit that the pillars and their entablature are useless and added incongruously, and that the upper story, not being arched like the lower, but solid, and with ugly pilasters, is a painful blemish. This last defect is so striking that, in spite of the somewhat dubious evidence of medals, I should feel inclined to suspect that it was a subsequent addition, and meant wholly for the purpose of supporting and working the great velarium or awning that covered the arena during the representation, which may not have been attempted when the amphitheatre was first erected.

Be this as it may, it certainly now mars very much the effect of the building. The lower stories are of bad design, but this is worse. Notwithstanding these defects, there is no building of Rome where the principle of reduplication of parts, of which the Gothic architects afterwards made so much use, is carried to so great an extent as in this. The Colosseum is principally indebted to this feature for the effect which it produces. Had it, for instance, been designed with only

one story of the height of the 4 now existing, and every arch consequently as wide as 4 of the present ones, the building would have scarcely appeared half the size it now is seen to be. It is true that when close under it, in comparing it with figures moving about or other objects, we might eventually have been able to realize its dimensions. In that case, a true sense of the vast size of the building would have had to be acquired, as is the case with the façade of St. Peter's. Now it forces itself on the mind at the first glance. It is the repetition of arch beyond arch and story on story that leads the mind



266. Elevation and Section of part of the Flavian Amphitheatre at Rome. Scale 50 ft. to 1 in.



267. Quarter-plan of the Seats and quarter-plan of the Basement of the Flavian Amphitheatre. Scale 100 ft. to 1 in.

on, and gives to this amphitheatre its imposing grandeur, which all acknowledge, though few give themselves the trouble to ask how it is produced.

Fortunately, too, though the face of the building is much cut up by the order, the entablatures are unbroken throughout, and cross the building in long vanishing lines of the most graceful curvatures. The oval, also, is certainly more favourable for effect than a circular form would be. A building of this shape may perhaps look smaller than it really is to a person standing exactly opposite either end; but in all other positions the flatter side gives a variety and an appearance of size which the monotonous equality of a circle would never produce.

The length of the building, measured along its greatest diameter, is 620 ft., its breadth 513, or nearly in the ratio of 6 to 5, which may be taken as the general proportion of these buildings, the variations from it being slight, and apparently either mistakes in setting out the work in ancient times, or in measuring it in modern days, rather than an intentional deviation. The height of the 3 lower stories, or what I believe to have been the original building, is 120 ft.; the total height as it now stands 157 ft. The arena itself measures 287 ft. in length by 180 in breadth, and it is calculated that the building would contain 80,000 spectators, though I am inclined to think this number exaggerated. 50,000 or 60,000 would be much nearer the truth, at least according to the data by which space is calculated in our theatres and public places.

Next in extent to this great metropolitan amphitheatre was that of Capua; its dimensions were 558 ft. by 460; its height externally 95 feet. It had 3 stories, designed similarly to those of the Colosseum, but all of the Doric order, and used with more purity than in the Roman example.

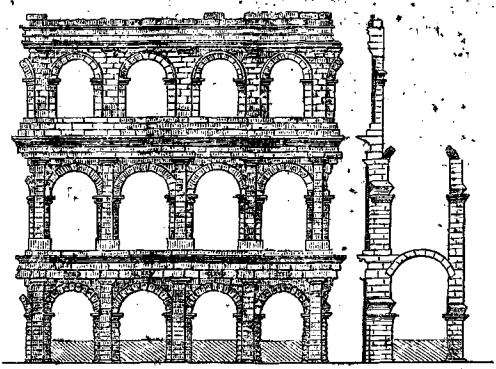
Next in age, though not in size, is that at Nismes, 430 ft. by 378, and 72 in height, in 2 stories. Both these stories are more profusely and more elegantly ornamented with pillars than those of either of the amphitheatres mentioned above. The entablature is however broken over each column, and pediments are introduced on each front. All these arrangements, though showing more care in design, and sufficient elegance in detail, make this building very inferior in grandeur to the two earlier edifices, whose simplicity of outline makes up, to a great extent, for their faults of detail.

A more beautiful example than this is that at Verona. Its dimensions are 502 ft. by 401, and 98 ft. high, in 3 stories beautifully proportioned. Here the order almost entirely disappears, to make way for rustication, showing that it must be considerably more modern than either of the three examples above quoted, though hardly so late as the time of Maximianus, to whom it is frequently ascribed.[1] The arena of this amphitheatre is very nearly perfect, owing to the care taken of it during the middle ages, when it was often used for tournaments and

[1] Maffei, 'Verona Illustrata,' vol. vii. p. 84 *et seq.*

other spectacles; but of its outer architectural enclosure only 4 bays remain, sufficient to enable an architect to restore the whole, but not to allow of its effect being compared with that of more entire examples.

The amphitheatre at Pola, which is of about the same age as that of Verona, certainly belonging to the last days of the Western Empire, presents in its ruin a curious contrast to the other. That at Verona has a perfect arena, and only a fragment of its exterior decoration, while the exterior of Pola is perfect, but not a trace remains of its arena, or of the seats that surrounded it. This is probably owing to their having been of wood, and consequently having either decayed or been burnt. Like that at Verona, it presents all the features of the last stage of transition; the order is still seen, or rather is everywhere suggested, but so concealed and kept subordinate that it does not at all interfere with the general effect. But for these faint traces we should possess in this amphitheatre one specimen entirely emancipated from incongruous Grecian forms, but, as before remarked, Rome perished just on the threshold of the new style.



263. Elevation of Amphitheatre at Verona. Scale 50 ft. to 1 in.

The dimensions of the amphitheatre at Pola are very nearly the same as of that at Nismes, being 436 ft. by 346. It has, however, 3 stories, and thus its height is considerably greater, being 97 ft. Owing to the inequality of the ground on which it is built, the lower story shows the peculiarity of a sub-basement, which is very pleasingly managed, and seems to emancipate it more from conventional forms than its contemporary at Verona. The third story, or attic, is also more pleasing than elsewhere, as it is avowedly designed for the support of the masts of the velarium. The pilasters and all Greek forms are omitted, and there is only a groove over every column of the middle story to receive the masts. There is also a curious sort of open battlement on the top, evidently designed to facilitate the working of the awning, though in what manner is not quite clear. There is still one other peculiarity about the building, inasmuch as the curvature of its lines is broken by 4 projections, intended apparently to contain staircases. They appear, however, to have been subsequent additions, the stones of which they are built being of a different colour from those of the body of the building. In a building so light and open as this one is in its present state there can be no doubt but that the projections give expression and character to the outline, though such additions would go far to spoil any of the greater examples above quoted.

At Otricoli there is a small amphitheatre, 312 ft. by 230, in 2 stories, from which the order has entirely disappeared; it is therefore possibly the most modern of its class, but the great flat pilasters that replace the pillars are ungraceful and somewhat clumsy. Perhaps its peculiarities ought rather to be looked on as provincialisms than as genuine specimens of an advanced style. Still there is a pleasing simplicity about it that on a larger scale would enable it to stand comparison with some of its greater rivals.

Besides these, which are the typical examples of the style, there are the Castrense at Rome, nearly circular, and possessing all the faults and none of the beauties of the Colosseum; one at Arles, very much ruined; and a great number of provincial ones, not only in Italy and Gaul, but in Germany and Britain. Almost all these were principally if not wholly excavated from the earth, the part above ground being the mound formed by the excavation. If they ever possessed any external decoration to justify their being treated as architectural objects, it has disappeared, so that in the state at least in which we now find them they do not belong to the ornamental class of works of which we are now treating.

Baths.

Next in splendour to the amphitheatres of the Romans were their great thermal establishments. In size they were perhaps even more remarkable, and their erection must certainly have been more costly. The amphitheatre, however, has the great advantage in an architectural point of view of being one object, one hall in short, whereas the baths were composed of a great number of smaller parts, not perhaps very successfully grouped together. They were wholly built of brick covered with stucco (except perhaps the pillars), and have, therefore, now so completely lost their architectural features that it is with difficulty that even the most practised architect can restore them to anything like their original forms.

In speaking of the great Thermæ of Imperial Rome, they must not be confounded with such establishments as that of Pompeii for instance. The latter was very similar to the baths now found in Cairo or Constantinople, and indeed in most eastern cities. These are mere establishments for the convenience of bathers, consisting generally of one or two small circular or octagonal halls, covered by domes, and one or two others of an oblong shape, covered with vaults or wooden roofs, used as reception rooms, or places of repose after the bath. These have never any external magnificence beyond an entrance-porch; and although those at Pompeii are decorated internally with taste, and are well worthy of study, their smallness of size and inferiority of design do not admit of their being placed in the same category as those of the capital, which are as characteristic of Rome as her amphitheatres, and are such as could only exist in a capital where the bulk of the people were able to live on the spoils of the conquered world rather than by the honest gains of their own industry.

Agrippa is said to have built baths immediately behind the Pan-

theon, and Palladio and others have amused themselves by restoring them, assuming that building to have been the entrance-hall. Nothing, however, could, I believe, be more unfounded than such an assumption, and no ruins exist sufficiently perfect to enable us to ascertain the exact site of these baths, if indeed they ever existed at all in this situation.

Nero's baths, too, are a mere heap of shapeless ruins, and those of Vespasian, Domitian, and Trajan in like manner are too much ruined for their form, or even their dimensions, to be ascertained with anything like correctness. Those of Titus are more perfect, but the very discrepancies that exist between the different systems upon which their restoration has been attempted show that enough does not remain to enable the task to be accomplished in a satisfactory manner. They owe their interest more to the beautiful fresco paintings that adorn their vaults than to their architectural character. These paintings are invaluable, as being almost the only relics of the painted decoration of the most flourishing period of the Empire, and give a higher idea of Roman art than other indications would lead us to expect.

The baths of Constantine are also nearly wholly destroyed, so that out of the great Thermæ two only, those of Diocletian and of Caracalla, now remain sufficiently perfect to enable a restoration to be made of them with anything like certainty.

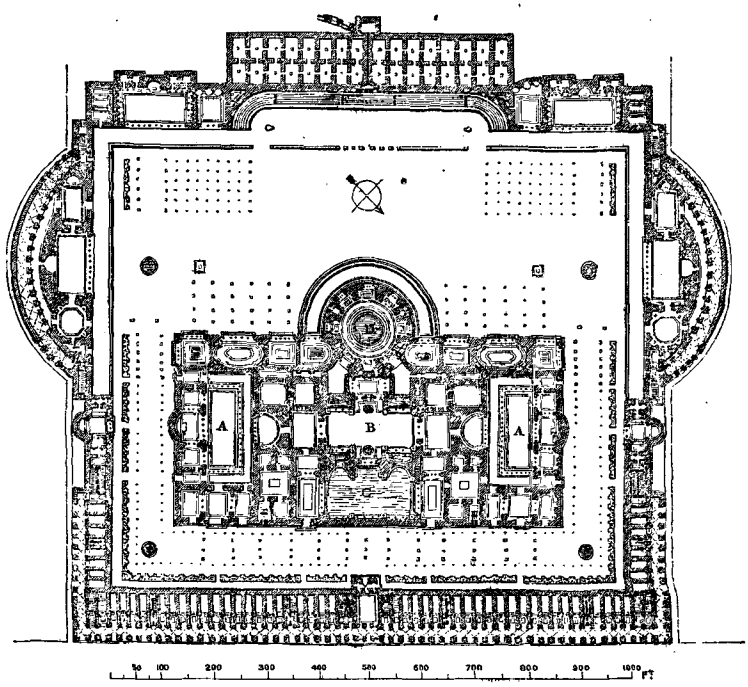
The great hall belonging to the baths of Diocletian is now the Church of Sta. Maria degli Angeli, and has been considerably altered to suit the altered circumstances of its use; and the modern buildings attached to the church have so overlaid the older remains that it is not easy to follow out the complete plan. This is of less consequence, as both in dimensions and plan they are extremely similar to those of Caracalla, which seem to have been among the most magnificent, as they certainly are the best preserved, of these establishments.[1]

The general plan of the whole enclosure of the baths of Diocletian was a square of about 1150 ft. each way, with a bold but graceful curvilinear projection on two sides, containing porticos, gymnasia, lecture-rooms, and other halls for exercise of mind or body. In the rear were the reservoirs to contain the requisite supply of water, and below them the hypocaust or furnace, by which it was warmed with a degree of scientific skill we hardly give credit for to the Romans of that age. Opposite to this and facing the street was one great portico extending the whole length of the building, into which opened a range of apartments meant apparently to be used as private baths, which extend also some way up each side. In front of the hypocaust, facing the north-east, was a semicircus or *theatridium*, 530 ft. long, where youths performed their exercises or contended for prizes.

These parts were, however, merely the accessories of the establish-

[1] These baths have been carefully measured by M. Blouet, who has also published a restoration of them. This is, on the whole, certainly the best account we have of any of these establishments.

ment surrounding the garden, in which the principal building was placed. This was a rectangle 730 ft. by 380, with a projection covered by a dome on the south-western side, which was 167 ft. in diameter externally, and 115 ft. internally. There were two small courts (A A) included in the block, but the whole of the rest appears to have been roofed over, and though, therefore, with about the same dimensions, it virtually covered far more ground, and, looking at the size and grandeur of the parts, it was a building on a far more magnificent scale than our new Houses of Parliament.



269. Baths of ~~Diocletian~~ Caracalla, as restored by A. Blouet.

In the centre was a great hall (B), almost identical in dimensions with the central aisle of the Basilica of Maxentius already described, being 82 ft. wide by 170 in length, and roofed in the same manner by an intersecting vault in three compartments, springing from 8 great pillars. This opened into a smaller apartment at each end, of rectangular form, and then again into 2 other semicircular halls, forming a splendid suite 460 ft. in length. This central room is generally considered as the *tepidarium*, or warmed apartments, having 4 warm baths opening out of it. On the north-east side was the natatio, or plunge bath (C), probably tepid, a room of nearly the same dimensions and design as the central one. On the side opposite to this was the circular apartment (D), covered by the dome above mentioned, which, from its situation and the openness of its arrangements, must have contained a cold bath or baths. There are

4 other rooms on this side, which seem also to have been cold baths. None of these points have, however, yet been satisfactorily settled, nor the uses of the smaller subordinate rooms; every restorer giving them names according to his own ideas. For our purpose it suffices to know that no groups of state apartments in such dimensions, and wholly devoted to purposes of display and recreation, were ever before or since grouped together under one roof. The taste of many of the decorations would no doubt be faulty, and the architecture shows those incongruities inseparable from its state of transition; but such a collection of stately halls must have made up a whole of greater splendour than we can easily realize from their bare and weather-beaten ruins, or from anything else to which we can compare them. Even allowing for their being almost wholly of brick, and being disfigured by the bad taste inseparable from everything Roman, there is nothing in the world which for size and grandeur can compare with these imperial places of recreation.[1]

[1] St. George's Hall at Liverpool is the most exact copy in modern times of a part of these Baths. The Hall itself is a reproduction both in scale and design of the central hall of Caracalla's Baths, but improved in detail and design, having five bays instead of only three. With the two courts at each end, it makes up a suite of apartments very similar to those found in the Roman examples. The whole building, however, is less than one-fourth of the size of the central mass of a Roman bath, and therefore gives but little idea of the magnificence of the whole.

CHAPTER V.

TRIUMPHAL ARCHES, TOMBS, AND OTHER BUILDINGS.

CONTENTS.

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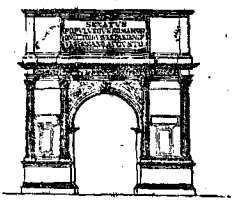
Triumphal arches were among the most peculiar of the various forms of art which the Romans borrowed from those around them, and used with that strange mixture of splendour and bad taste which characterises all their works.

These were in the first instance no doubt borrowed from the Etruscans, as was also the ceremony of the triumph with which they were ultimately associated. At first they seem rather to have been used as festal entrances to the great public roads, whose construction was considered as one of the most important benefits a ruler could confer on his country. There was one erected at Rimini in honour of an important restoration of the Flaminian Way by Augustus; another at Susa in Piedmont, to commemorate a similar act of the same Emperor. Trajan built one on the pier at Ancona, when he restored that harbour, and another at Beneventum, when he repaired the Via Appia, represented in the woodcut here given (No. 270). It is one of the best preserved as well as most graceful of its class in Italy. The arch

270. Arch of Trajan at Beneventum. From a plate in Gailabaud's Architecture.

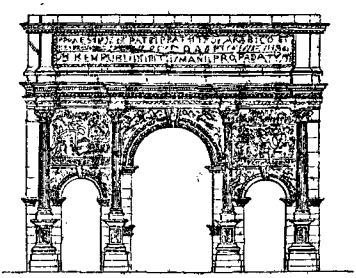
of the Sergii at Pola in Istria seems also to have been erected for a like purpose. That of Hadrian at Athens, and another built by him at Antinoë in Egypt, were monuments merely commemorative of the benefits which he had conferred on those cities by the architectural works he had erected within their walls. By far the most important application of these gateways, in Rome at least, was to commemorate a triumph which may have passed along the road over which the arch was erected, and perhaps in some instances it may have been erected beforehand, for the triumphal procession to pass through, of which it would remain a memorial.

The Arch of Titus at Rome is well known for the beauty of its detail, as well as from the extraordinary interest which it derives from having been erected to commemorate the conquest of Jerusalem, and consequently representing in its bassi-rilievi the spoils of the Temple. From the annexed elevation, drawn to the usual scale, it will be seen that the building is not large, and it is not so well proportioned as that at Beneventum, represented in the last woodcut, the attic being overpoweringly high. The absence of sculpture on each side of the arch is also a defect, for the real merit of these buildings is their being used as frameworks for the exhibition of sculptural representations of the deeds they were erected to commemorate.



271. Arch of Titus at Rome. Scale 50 ft. to 1 in.

In the later days of the Empire 2 side-arches were added for foot-passengers, in addition to the carriage-way in the centre. This added much to the splendour of the edifice, and gave a greater opportunity for sculptural decoration than the single arch afforded. The Arch of Septimius Severus, represented to the same scale in woodcut No. 272, is perhaps the best specimen of the class. That of Constantine is very similar and in most respects equal to this—a merit which it owes to most of its sculptures being borrowed from earlier monuments.



272. Arch of Septimius Severus. Scale 50 ft. to 1 in.

More splendid than either of these is the arch at Orange. We do not know by whom it was erected, or even in what age: it is, however, certainly very late in the Roman period, and shows a strong tendency to treat the order as entirely subordinate, and to exalt the plain masses into that importance which characterises the late transitional period. Unfortunately its sculptures are so much destroyed by time and violence that it is not easy to speak with certainty as to their age; but more might be done than has hitherto been effected to illustrate this important monument.

At Rheims there is an arch which was probably much more magnificent than this. When in a perfect state it was 110 ft. in width, and

had 3 openings, the central one 17 ft. wide by 40 ft. high, and those on each side 10 ft. in width, each separated by 2 Corinthian columns. From the style of the sculpture it certainly was of the last age of the Roman Empire, but, having been built into the walls of the city, has been so much ruined that it is difficult to say what its original form may have been.

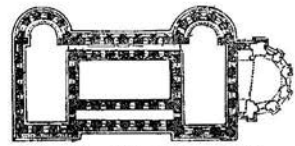
Besides these there is in France a very elegant single-arched gateway at St. Rémi, similar to and probably of the same age as that at Beneventum; another at Cavallon, and one at Carpentras, each with one arch. There is also one with two similar arches at Langres; and one, the Porta Nigra, at Besançon, which shows so complete a transition from the Roman style that it is difficult to believe that it does not belong to the renaissance.

There still remains in France another class of arches, certainly not triumphal, but so similar to those just mentioned that it is impossible to separate the one from the other. The most important of these are two at Autun, called respectively the Porte Arroux and the Porte St. André, a view of which is given in woodcut No. 271. Each of these

273. Porte St. André at Autun. From Laborde's Monumens de la France.

has two central large archways for carriages, and one on each side for foot-passengers. Their most remarkable peculiarity is the light arcade or gallery that runs across the top of them, replacing the attic of the Roman arch, and giving a degree of lightness combined with height that these never possessed. These gates were certainly not meant for defence, and the apartment over them could scarcely be applied to utilitarian purposes; so that we may, I believe, consider it as a mere ornamental appendage, or as a balcony for display on festal occasions. It appears, however, to offer a better hint for modern arch-builders than any other example I know of.

Even more interesting than these gates at Autun is that called the Porta Nigra at Trèves; for though far ruder in style and coarser in detail, as might be expected from the remoteness of the province where it is found, it is far more complete. Indeed it is the only example of its class which we possess in anything like its original state. Its front consists of a double archway surmounted by an arcaded gallery, like the French examples. Within this is a rectangular court which seems never to have been roofed, and beyond this a second double archway similar to the first. At the ends of the court, projecting each way beyond the face of the gateway and the gallery surmounting it, are 2 wings 4 stories in height, containing a series of apartments in the form of small basilicas, all similar to one another, and measuring about 55 ft. by 22. It is not easy to understand how these were approached, as there is no stair and no place for one. Of course there must have been some mode of access, and perhaps it may have been on the site of the apse, shown in the plan (woodcut No. 274), which was added when the building was converted into a church in the middle ages. These apartments were probably originally used as courts or chambers of justice, thus realising, more nearly than any other European example I am acquainted with, the idea of a gate of justice.



274. Plan of Porta Nigra at Trèves. Scale, 100 ft. to 1 in.

275. View of the Porta Nigra at Trèves.

Notwithstanding its defects of detail, there is a variety in the outline of this building and a boldness of profile that render it an extremely pleasing example of the style; and though exhibiting many of the faults of the design of the Colosseum, it possesses all that repetition of parts and Gothic feeling of design which give such value to its dimensions, though these are far from contemptible, the building being 115 ft. wide by 95 in height to the top of the wings.

There probably were many similar gates of justice in the province, but all have perished, unless we except those at Autun just described. I am convinced that at that place there were originally such wings as those at Trèves, and that the small church, the apse of which is seen on the right hand (woodcut 273), stands upon the foundations of one of these. A slight excavation on the opposite side would settle this

point at once. If it could be proved that these gateways at Autun had such lateral adjuncts, it would at once explain the use of the gallery over the arch, as a passage connecting the 2 wings together, which otherwise looks so unmeaning.

Another form also is that of an arch at the entrance of a bridge, generally bearing an inscription commemorative of its building. Its purpose is thus closely connected with that of the arches before mentioned, which commemorate the execution of roads. Most of the great bridges of Italy and Spain were so adorned; but unfortunately they have either been used as fortifications in the middle ages, or removed in modern times to make way for the increased circulation of traffic. That built by Trajan on his noble bridge at Alcantara in Spain is well known; and there exists a double-arched bridge at Saintes, in the south of France. The most elegant and most perfect specimen, however, of this class is that of St. Chamas in Provence, represented in the woodcut No. 276. It consists of 2 arches, one at each end of the bridge, of

276. Bridge at Chamas. From Laborde's Monumens de la France.

singular elegance of form and detail. Although it bears a still legible inscription, it is uncertain to what age it belongs, probably that of the Antonines; and I should account for the purity of its details by the Greek element that pervades the south of France. Whether this is so or not, it is impossible not to admire not only the design of the whole bridge with its 2 arches, but the elegance with which the details have been executed.

Used in this mode as commencements of roads, or entrances to bridges, or as festal entrances to unfortified towns, there are perhaps no monuments of the second class more appropriate or more capable of architectural expression than these arches, though all of them have been more or less spoiled by an incongruous order being applied to them. Used, however, as they were in Rome, as monuments of victory, with-

out even an excuse for a passage through them, not only is the taste of such erections more than questionable, but the mode in which they were cut up by broken cornices and useless columns, on tall pedestals and other trivial details, deprived them of that largeness of design which is the true merit and great characteristic of Roman art, while they totally missed that exquisite elegance with which the Greeks knew so well how to dignify even the most trivial objects.

PILLARS OF VICTORY.

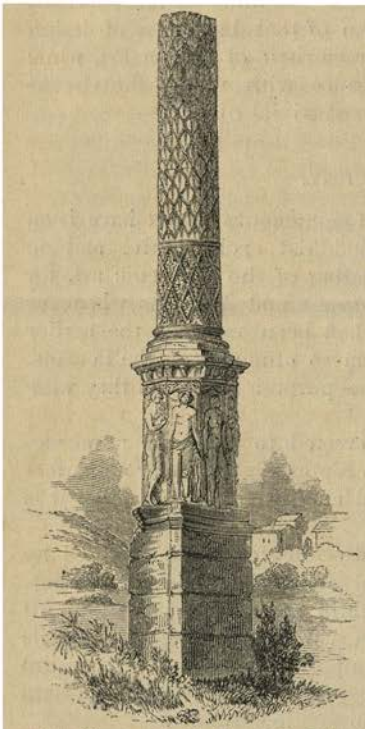
The pillars of Victory are a class of monuments which have been already mentioned in speaking of Buddhist architecture, and to which we must again revert when treating of the Saracenic art, for they seem to have been adopted by Romans and Moslems whenever they settled in countries where they had been used by the earlier inhabitants. No people ever used them so clumsily as the Romans, or with so little true appreciation of the purpose for which they were designed.

The "Columna Rostrata," or that erected to celebrate naval victories, was, so far as we can judge from representations (for no perfect specimen exists), one of the ugliest and clumsiest forms of pillar it is possible to conceive.

Of those of Victory, one of the most celebrated is that erected by Diocletian at Alexandria. A somewhat similar one exists at Arsinoë, erected by Alexander Severus; and a third at Mylassa in Caria. All these are mere Corinthian pillars of the usual form, and with the details of those used to support entablatures in porticos. However beautiful these may be in their proper place, they are singularly unappropriate and ungraceful when used as minarets or single columns.

There are two in Rome not quite so bad as these, both being of the Doric order. Had the square abacus in these been cut to a round form, and ornamented with an appropriate railing, we might almost forget their original, and fancy that they really were round towers with balconies at the top. The great object of their erection was to serve as vehicles for sculpture, though, as we now see them, or as they are caricatured at Paris and elsewhere, they are little more than instances of immense labour bestowed to very little purpose. In the original use of these pillars they were placed in small courts surrounded by open porticos, whence the spectator could at two or perhaps at three different levels examine the sculpture at his leisure and at a convenient distance, while the absurdity of the pillar supporting nothing was not apparent, from its not being seen from the outside. This arrangement is explained in woodcut No. 256, which is a section through the basilica of Trajan, showing the position of his column, not only with reference to that building, but to the surrounding colonnade. The same was almost certainly the case with the pillar of Marcus Aurelius, which, with slight modifications, seems to have been copied from that of Trajan; but even in the most favourable situations no monuments can be less worthy of admiration or of being copied than these.

A far better specimen of this class is that at Cussi, near Beaune, in France. It probably belongs to the time of Aurelian, but it is not known either by whom it was erected or what victory it was designed to celebrate; still that it is a pillar of victory is undoubted; and its resemblance to pillars raised with the same object in India is quite striking.[1]



277. Column at Cussi. From Laborde's Monumens de la France.

278. Supposed Capital of Column at Cussi.

The arrangement of the base serving as a pedestal for 8 statues is not only elegant but appropriate. The ornament which covers the shaft takes off from the idea of its being a mere pillar, and at the same time is so subdued as not to break the outline or interfere with constructive propriety.

The capital, of the Corinthian order, is found in the neighbourhood used as the mouth of a well. In its original position it no doubt had a hole through it, which being enlarged suggested its application to its present ignoble purpose, the hole being no doubt intended either to receive or support the statue or emblem that originally crowned the monument, but of that no trace now remains.

There cannot be a more natural mode of monumental expression than that of a simple upright stone set up by the victors to commemorate their prowess and success. Accordingly steles or pillars erected for this purpose are found everywhere, and take shapes as various as the countries where they stand, or as the people who erected them; but nowhere was their true architectural expression so mistaken as in Rome, where, by perverting a feature designed for one purpose to a totally different use, an example of bad taste was given till then unknown, though in our days it has become not uncommon.

Tombs.

In that strange collection of the styles of all nations which, mingled together, makes up the sum of Roman art, nothing strikes the architectural student with more astonishment than the number and importance of their tombs. If the Romans are of Indo-Germanic origin, as is

[1] Compare woodcut No. 77.

generally assumed, they are the only people of that race among whom tomb-building was not utterly neglected. The importance of the tombs among the Roman remains proves one of two things. Either a considerable proportion of Etruscan blood was mixed up with that of the dominant race in Rome, or the fierce and uncivilized Romans, having no art of their own, were led blindly to copy that of the people among whom they were located.

Of the tombs of Consular Rome nothing remains except perhaps the sarcophagus of Scipio; and it is only on the eve of the Empire that we meet with the well-known one of Cæcilia Metella, the wife of Crassus, which is not only the best specimen of a Roman tomb now remaining to us, but the oldest building of the imperial city of which we have an authentic date. It consists of a bold square basement about 100 ft. square,[1] which was originally ornamented in some manner not now intelligible. From this rose a circular tower about 94 ft. in diameter, of very bold masonry, surmounted by a frieze of ox-skulls with wreaths joining them, and a well-profiled cornice: 2 or 3 courses of masonry above this seem to have belonged to the original work; and above this, almost certainly, in the original design rose a conical roof, which has perished. The tower having been used as a fortress in the middle ages, battlements have been added to supply the place of the roof, and it has been otherwise disfigured, so as to detract much from its beauty as now seen. Still we have no tomb of the same importance so perfect, nor one which enables us to connect the Roman tombs so nearly with the Etruscan. The only addition in this instance is that of the square basement or podium, though even this was not unknown at a much earlier period, as for instance in the tomb of Aruns (woodcut No. 237). The exaggerated height of the circular base is also remarkable. Here it rises to be a tower instead of a mere circular base of stones for the earthen cone of the original sepulchre. The stone roof which probably surmounted the tower was a mere reproduction of the original earthen cone.

279. Tomb of Cæcilia Metella.

Next in age and importance was the tomb of Augustus in the Campus Martius. It is now so completely ruined that it is extremely difficult to make out its plan, and those who drew and restored it in former days were so careless in their measurement that it is difficult to ascertain even its dimensions: it appears however to have consisted of a circular basement about 300 ft. in diameter, and about 60 ft. in

[1] I am extremely uncertain about the dimensions of this building: these are the best I can find.

height, adorned with 12 large niches. Above this rose a cone of earth as in the Etruscan tombs, not smooth like those, but divided into terraces, which were planted with trees. We also learn from Suetonius that Augustus laid out the grounds around his tomb and planted them with gardens for public use during his lifetime. More like the practice of a true Mogul in the East than the ruler of an Indo-Germanic people in Europe.

This tomb, however, was far surpassed, not only in solidity but in splendour, by that which Hadrian erected for himself on the banks of the Tiber, now known as the Mole of Hadrian, or more frequently the Castle of St. Angelo. The basement of this great tomb was a square about 340 ft. each way, and about 75 ft. high. Above this rose a circular tower 235 ft. in diameter and 140 in height. The whole was crowned probably by a dome, or at least by a curvilinear roof, which with its central ornament must have risen to a height of not less than 300 ft. The circular or tower-like part of this splendid building was ornamented with columns, but in what manner restorers have not quite been able to agree; some making 2 stories, both with pillars, some, one of pillars and the upper one of pilasters. It would require more correct measurement than we have to enable us to settle this point, but it seems probable that there was only one range of columns on a circular basement of some height surmounted by an attic of at least equal dimensions. The order might have been 70 ft., the base and attic 38 ft. each.

Internally the mass was nearly solid, having only 2 small sepulchral chambers, one above the other, in the centre. There may, however, have been a circular apartment under the dome, though this is hardly probable.

Besides these there was another class of tombs in Rome, called columbaria, generally oblong or square rooms below the level of the

250. Columbarium near the Gate of S. Sebastian, Rome.

ground, the walls of which were pierced with a great number of little pigeonholes or cells just of sufficient size to receive an urn containing the ashes of the body, which had been burnt according to the usual Roman mode of disposing of the dead. Externally of course they had

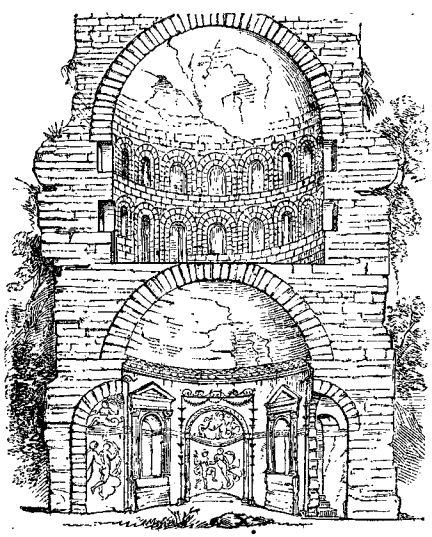
no architecture, though some of the more important family sepulchres of this class were adorned internally with pilasters and painted ornaments of considerable beauty.

In the earlier ages of the Roman empire these two forms of tombs characterised with sufficient clearness the two races, each with their distinctive customs, which made up the population of Rome. Long before its expiration the two were fused together so thoroughly that we lose all trace of the distinction, and a new form of tomb arose compounded of the two older, which became the typical form with the early Christians, and from them passed to the Saracens and other eastern nations.

The new form of tomb retained externally the circular form of the Pelasgic sepulchre, though constructive necessities afterwards caused it to become polygonal. Instead however of being solid, or nearly so, the walls were only so thick as were necessary to support the dome, which became the universal form of roof of these buildings.

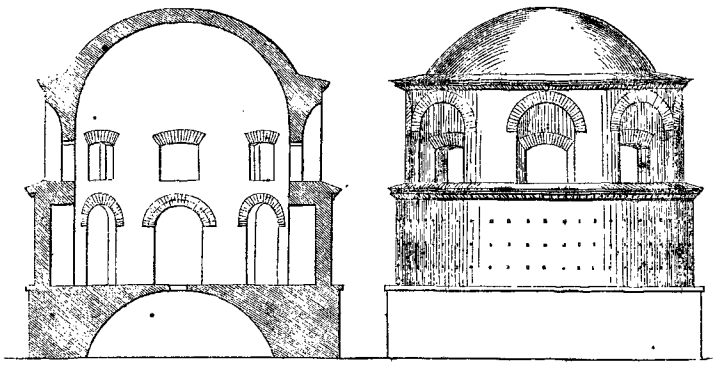
The sepulchres of Rome have as yet been far too carelessly examined to enable us to trace all the steps by which the transformation took place, but as a general rule it may be stated that the gradual enlargement of the central circular apartment is almost a certain test of the age of a tomb: till at last, before the age of Constantine, they became in fact representations of the Pantheon on a small scale, almost always with a crypt or circular vault below the principal apartment.

One of the most curious transitional specimens is that found near San Vito, represented in the woodcut No. 281. Here, as in all the earlier specimens, the principal apartment is the lower in the square basement. The upper, which has lost its decoration, has the appearance of being hollowed out of the frustum of a gigantic Doric column, or rather out of a solid tower like the central one of the tomb of Aruns (woodcut No. 237). Shortly after the age of this sepulchre the lower apartment became a mere crypt, and in such examples as those of the sepulchres of the Cornelia and Tossia families we have merely miniature Pantheons somewhat taller in proportion, and with a crypt. This is still more remarkable in a building called the Torre dei Schiavi, which has had a portico attached to one side, and in other respects looks very like a direct imitation of that celebrated temple. It seems certainly, however, to have been built for a tomb.



281. Section of Sepulchre at San Vito. No scale.

Another tomb, very similar to that of the Tossia family, is called that of Sta. Helena, the mother of Constantine. If not hers, at least it belongs to the last days of the Empire, and may be taken as a fair specimen of the tombs of the age and of the class. It is a vast transition from that of Cæcilia Metella, though in the same direction as all the changes introduced by the Romans, the tendency of which was constantly transforming an external into an internal architecture.



282. Section and Elevation of Tomb of Sta. Helena, Rome. No scale.

It consists of a basement about 100 ft. square, containing the crypts. On this stands a circular tower in two stories. In the lower story is a circular apartment about 66 ft. in diameter, surrounded by 8 niches; in the upper the niches are external, and each pierced with a window. Its dimensions being nearly the same as those of the tomb of Cæcilia Metella, it affords an excellent opportunity of comparing the two extremes of the series, and of contrasting the early Roman with the early Christian tomb.

The typical example of a sepulchre of this age is the tomb or baptistery of Sta. Costanza, the daughter of Constantine. In this building the pillars that adorned the exterior of such a mausoleum, for instance, as that of Hadrian, are introduced internally. Externally the building never can have had much ornament. But the breaks between the lower aisle and the central compartment, pierced with the clerestory, must have had a very pleasing effect—more so at all events than the clumsy attempts that were made at this age to adorn buildings by ill-understood applications of the Grecian orders. In this example there is still shown a certain degree of timidity, which does not afterwards reappear. The columns are coupled and far more numerous than they need have been, and they are united by a fragment of an entablature, as if the architect were afraid to place his vault direct on the capitals. Still, notwithstanding these defects, it is a pleasing and singularly instructive example of a completed transformation, just what we miss in those secular buildings for which the Christians had no use.

Another building, which now goes by the name of the Baptistery of Constantine, was also undoubtedly a place of sepulture, though whether it is rightly ascribed to Constantine, and was intended by him

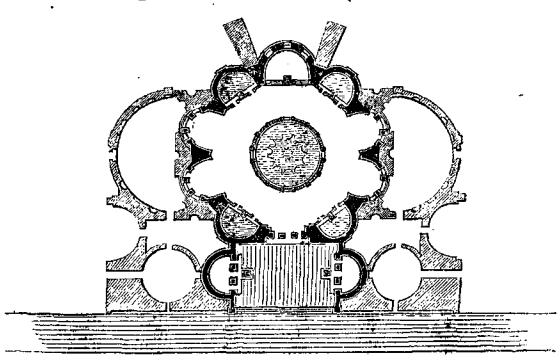
for his own tomb, may be questioned. Here the central apartment, never having been intended to support a dome, is of a far lighter construction, an upper order of pillars being placed on the lower, with merely a light architrave and frieze running between the two orders. The external walls were slight in construction and octagonal in plan. We must not in this place pursue any further the subject of the transition of style, as we have already trespassed within the pale of Christian architecture and passed beyond the limits of heathen art. So gradual is the change, and so long prepared, that it is impossible to draw the line exactly where the separation takes place between the one and the other.

TEMPLE OF MINERVA MEDICA.

One important building remains to be mentioned before leaving this part of the subject. It commonly goes by the name of the Temple of Minerva Medica, though this is certainly a misnomer. Recently it has become the fashion to assume that it was the hall of some bath; no building of that class, however, was known to exist in the neighbourhood, and it is extremely improbable that any should be found outside the Servian walls in this direction; besides that it wants all the necessary accompaniments of such an establishment.

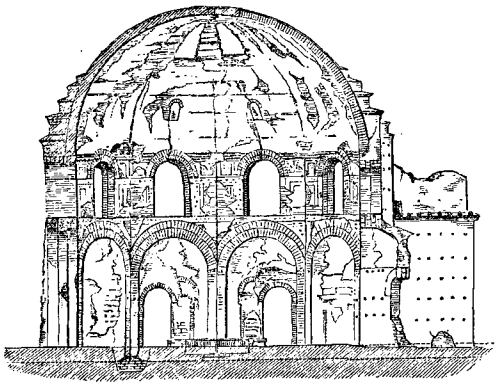
I have placed it with the tombs because its site is one that would justify such a supposition, and its form is just such as would be applicable to that purpose and to no other. I by no means wish to insist positively on this opinion, but I know of no more probable supposition. It certainly belongs to the last days of the Empire at Rome, if indeed it be not a Christian building, which I am very much inclined to believe it is, for, on comparing it with the Baptistery of Constantine and the tomb of Sta. Costanza, it shows a considerable advance in construction on both these buildings, and a greater similarity to San Vitale at Ravenna, and other buildings of Justinian's time, than to anything else now found in Rome.

As will be seen from the plan and section (woodcuts Nos. 283 and 284), it has a dome, 80 ft. in diameter, resting on a decagon of singularly light and elegant construction. Nine of the compartments contain niches which give great room on the floor, as well as great variety and lightness to the general design. Above this is a clerestory of 10 well-proportioned windows, which give light to the building, perhaps not in so effective a manner as the one eye of the



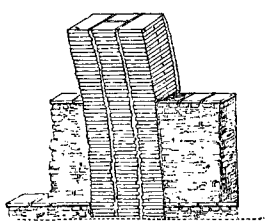
283. Plan of Minerva Medica at Rome. From Isabelle's Edifices Circulaires. Scale, 100 ft. to 1 in.

Pantheon, but by a far more convenient arrangement to keep out the elements for a people who did not possess glass. So far as I know, all the domed buildings erected by the Romans up to the time of Constantine, and indeed long afterwards, were circular in the interior, though, like the temple built by Diocletian at Spalatro, they were sometimes octagonal externally. This, however, is a polygon both internally and on the outside, and the mode in which the dome is placed on the polygon shows the first rudiments of the pendentive system, which was afterwards carried to such perfection by the Byzantine architects, but is nowhere else to be found in Rome. It probably was for the purpose of somewhat diminishing the difficulties of this construction that the architect adopted a figure with 10 instead of 8 sides.



284. Section of Minerva Medica. Scale, 50 ft. to 1 in.

This, too, is, I believe, the first building in which buttresses are applied so as to give strength to the walls exactly at the point where it is most wanted. By this invention the architect was enabled to dispense with nearly one half of the amount of materials that was thought necessary when the dome of the Pantheon was constructed, and which he must have employed had he copied that building. Besides this the dome was ribbed with tiles, as shown in woodcut No. 285, and the space between the ribs filled in with inferior, perhaps lighter masonry, banded together at certain heights by horizontal courses of tiles when necessary.



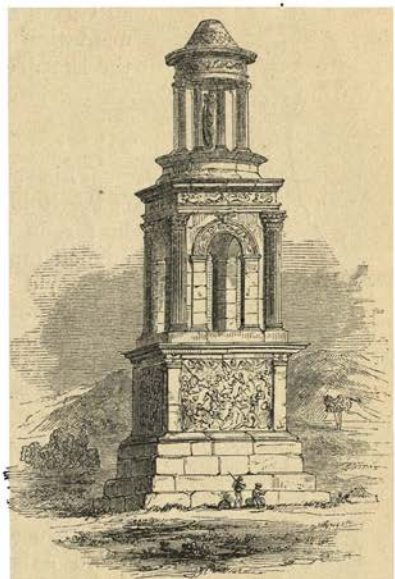
285. Rib of the Roof of the Minerva Medica at Rome.

Besides the lightness and variety which the base of this building derives from the niches, it is 10 ft. higher than its diameter, which gives to it that proportion of height to width, the want of which is the principal defect of the Pantheon. It is not known what the side erections are which are usually shown in the ground-plans, nor even whether they are coëval with the main central edifice. I suspect they have never been very correctly laid down.

Taking it altogether, the building is certainly, both as concerns construction and proportion, by far the most scientific of all those in ancient Rome, and in these respects as far superior to the Pantheon as it is inferior to that temple in size. Indeed there are few inventions of the middle ages that are not attempted here or in the Temple of

Peace—but more in this than in the latter; so much so, indeed, that I cannot help believing that it is much more modern than is generally supposed.

As might be expected from our knowledge of the races that inhabited the European provinces of the Roman empire, there are very few specimens of tombs of any importance to be found in them. One very beautiful example exists at St. Rémi, represented in the annexed woodcut (No. 286). It probably, however, can hardly be called a tomb, but rather a cenotaph or a monument, erected, as the inscription on it tells us, by Sextus and Marcus, of the family of the Julii, to their parents, whose statues appear under the dome of the upper story. There is nothing funereal either in the inscription or the form, nor anything to lead us to suppose that the bodies of the parents repose beneath its foundation.



286. Tomb at St. Rémi. From Laborde's Monumens de la France.

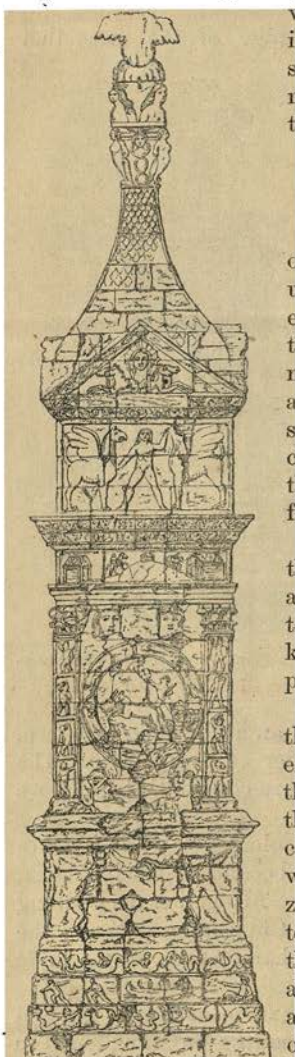
The lower portion of this monument is the square basement which the Romans always added to the Etruscan form of tomb. Upon this stands a story pierced with an archway in each face, with a 3-quarter pillar of the Corinthian order at every angle. The highest part is a circular colonnade, a miniature copy of that which we know to have once encircled Hadrian's Mole.

The open arrangement of the arches and colonnade, while it takes off considerably from the tomb-like simplicity becoming such buildings, adds very much to the lightness and elegance. Altogether the building has much more of the aspiring character of Christian art than of the more solid and horizontal forms which were characteristic of the style then dying out.

Another monument of very singular and exceptional form is found at Igel, near Trèves, in Germany. It is so unlike anything found in Italy, or indeed anything of the Roman age, that, were its date not perfectly known from the inscription upon it, one might rather be inclined to ascribe it to the age of Francis I. than to the latter days of the Roman Empire.

The form is graceful, though the pilasters and architectural ornaments seem somewhat misplaced. It is covered with sculpture from top to bottom. These, however, as is generally the case with Roman funeral monuments, have no reference to death, nor to the life or actions of the person to whom the monument is sacred, but are more

like the scenes that might be painted on a wall or ornamental stele anywhere. The principal object in the face represented in the woodcut is the sun, but the subjects are varied in each face, and, though much time-worn, they still give a very perfect idea of the rich ornamentation of the monuments of the last age of the Empire.



287. Monument at Igel, near Trêves. From Schmidt's Antiquities of Trêves.

Eastern Tombs.

This scarcity of tombs in the western part of the Roman empire is to a great extent made up for, in the east. The history of the tombs erected under the Roman rule in that part of the world is as yet so little known that it is not easy either to classify or to describe them; and as nearly all those which have been preserved are cut in the rock, it is sometimes difficult—as with other rock-cut objects all over the world—to understand the form of building from which they were copied.

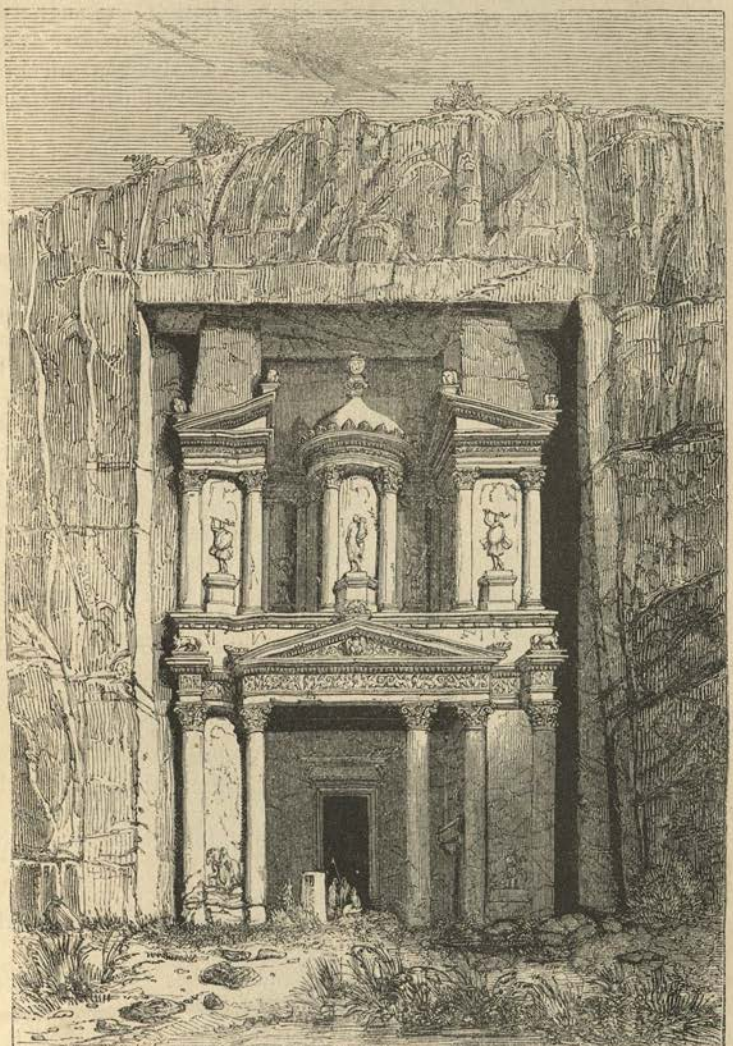
The 3 principal groups of the tombs of the Roman epoch are those of Petra, Cyrene, and Jerusalem. Though many other important tombs exist in those countries, they are so little known that they must be passed over for the present.

From the time when Abraham was laid in the cave of Machpelah until after the Christian era, we know that burying in the rock was not the exception but the general practice among the nations of this part of the East. So far as can be known, the example was set by Egypt, which was the parent of much of their civilization. In Egypt the façades of their rock-cut tombs were—with the solitary exception of those of Beni Hassan[1]—ornamented so simply and unobtrusively as rather to belie than to announce their internal magnificence. All the oldest Asiatic tombs seem to have been mere holes in the rock, wholly without architectural decorations.

We have seen, however, how the Persian kings copied their palace façades to adorn their last resting-places, and how about the same time in Lycia the tomb-cutters copied, first their own wooden structures, and afterwards the architectural façades, which they had learned from the Greeks how to construct. But it was not

[1] See p. 226, and woodcut 161.

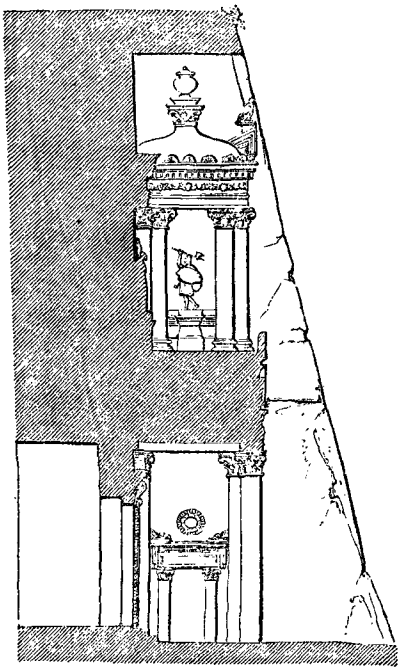
till the Roman period that this species of magnificence extended to the places enumerated above. To such an extent did it prevail at Petra as to give to that now deserted valley the appearance of a petrified city of the dead.



288. Khasné. From Laborde's Petra and Mount Sinai.

The typical and most beautiful tomb of this place is that called the Khasné or Treasury of Pharaoh—represented in elevation and section in the annexed woodcuts. As will be seen, it consists of a square basement, adorned with a portico of 4 very beautiful Corinthian pillars, surmounted by a pediment of low Grecian pitch. Above this

are 3 very singular turrets, whose use and application it is extremely difficult to understand. The central one is circular, and is a well-understood sepulchral form, the use of which, if it had been more important, or if it stood alone, would be intelligible enough; but what are the side turrets? If one might hazard so bold a conjecture, I would suggest that the original from which this is derived was a 5-turreted tomb, like that of Aruns (woodcut No. 237), or that of Alyattes at Sardis, which in course of time has become translated into so foreign a shape as this; but where are the intermediate forms? and by whom and when was this change effected? Before we form such theories as this, it will be well to ask the question whether all these buildings really are tombs? Most of them undoubtedly are so; but may not the name *el Deir*, or the convent, applied by the Arabs to one of the principal rock-cut monuments of Petra, be after all the true designation? Are none of them, in short, cells for priests, like the *viharas* found in India?[1] All those who have hitherto visited these spots have assumed at once that everything cut in the rock must be a tomb, but I am much mistaken if the rule is so general as is supposed.



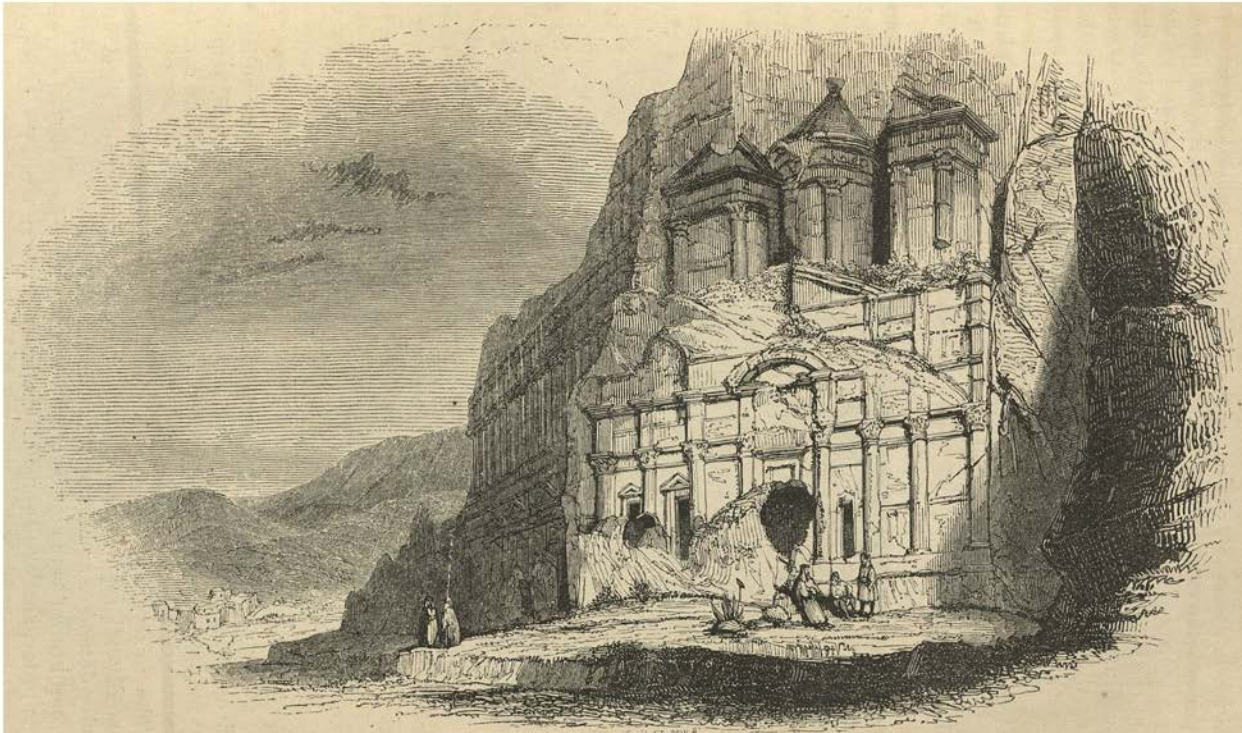
289. Section of Tomb at Khasné. From Laborde's Mount Sinai, p. 175.

To return however to the Khasné. Though all the forms of the architecture are Roman, the details are so elegant and generally so well designed as almost to lead to the suspicion that there must have been some Grecian influence brought to bear upon it. The masses of rock left above the wings show how early a specimen of its class it is, and how little practice its designers could have had in copying in the rock the forms of their regular buildings.

A little further within the city is found another very similar in design to this, but far inferior in detail and execution, showing at least a century of degradation, but at the same time an adaptation to rock-cut forms not found in the earlier examples.

A third is that above alluded to, called *el Deir*. This is the same in general outline as the two former—of an order neither Greek nor Roman, but with something like a Doric frieze over a very plain Corinthian capital. In other respects it presents no new feature

[1] See p. 30 *et seqq.*

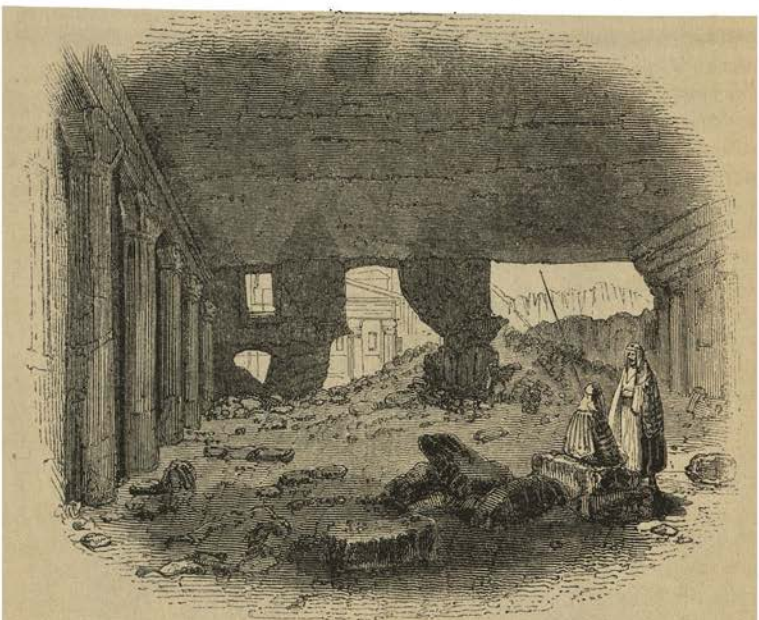


290. Corinthian Tomb, Petra. From Laborde's Sinai, p. 186.

except the apparent absence of a door, and altogether it seems, if finished, to deserve its name less than either of the other two.

Perhaps the most singular object among these tombs is the flat façade with 3 stories of pillars one over the other—slightly indicated in the left of the Corinthian tomb in the last woodcut (No. 290). It is like the proscenium of some of the more recent Greek theatres. If it was really the frontispiece to a tomb, it was totally unsuitable to the purpose, and is certainly one of the most complete misapplications of Greek architecture ever made.

Generally speaking, the interiors of these buildings are so plain that travellers have not cared either to draw or measure them; one, however, represented in the annexed woodcut, is richly ornamented,



291. Rock-cut interior at Petra. From Laborde's Sinai, p. 198.

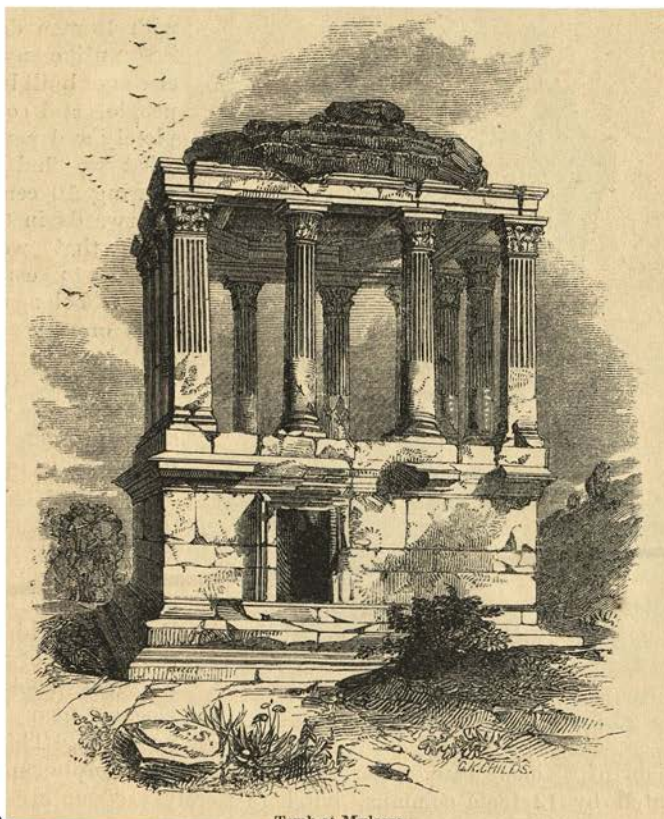
and, as far as can be judged from what is published, is as unlike a tomb as it is like a *vihara*. But, as before remarked, they all require re-examination before the purpose for which they were cut can be pronounced upon with any certainty.

The next group of tombs is that at Jerusalem. These are undoubtedly all sepulchres. By far the greater number of them are wholly devoid of architectural ornament. To the north of the city is a group known as the tombs of the kings, with a façade of a corrupt Doric order, similar to some of the latest Etruscan tombs.[1] It is now

[1] M. de Saulcy has recently attempted to prove that these tombs are those of the kings of Judah from David downwards. Their architecture is undoubtedly later than the Christian era, and the slab, which he calls the cover of the sarcophagus of David, is certainly more modern than the time of Constantine.

very much ruined. A somewhat similar façade, but of a form more like the Greek Doric, in the Valley of Jehoshaphat, bears the name of the Sepulchre of St. James, and near this is a square tomb cut out of the rock, but standing free, and with a pyramidal roof, which is unlike anything else seen either here or in these parts. The most remarkable, however, is that called the Tomb of Absalom, consisting of a square basis, adorned with 4 Ionic columns on each face, and above this a low circular tower, which seems to have been intended to bear either a small domed building like the central one on the upper part of the Khasné, or a simple dome. The present somewhat anomalous termination is in masonry, and so unlike everything else of its class that we know of, that we must consider it as a modern improvement.

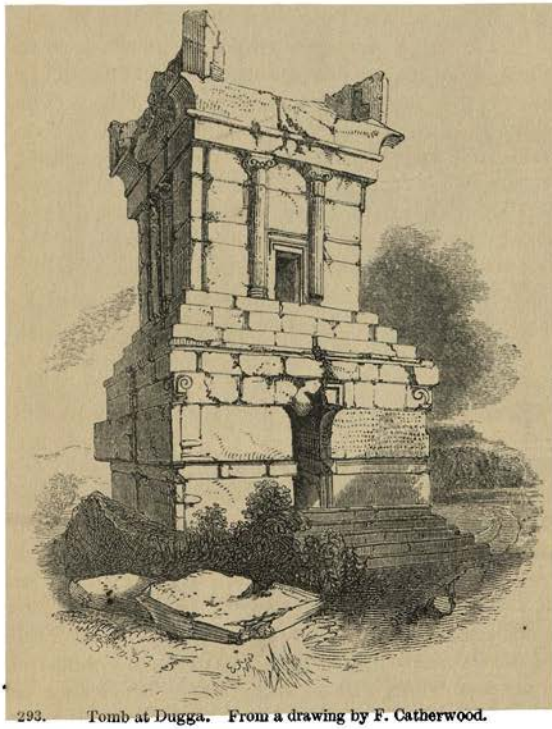
The third group is that of Cyrene, on the African coast. Notwithstanding the researches of Admiral Beechey and of M. Pacho, they are still much less perfectly known to us than they should be. Their number is immense, and they almost all have architectural façades, generally consisting of 2 or more columns between pilasters, like the grottos of Beni Hassan, or the tomb of St. James at Jerusalem. Many of them show a powerful reminiscence of Greek taste, though they are



292. Tomb at Mylassa.

for the most part undoubtedly of Roman date, and the paintings with which many of them are still adorned are certainly in Roman taste. None of them have such splendid architectural façades as the Khasné at Petra; but the number of tombs which are adorned with architectural features is greater than in that city, and, grouped as they are together in terraces on the hill side, they constitute a necropolis among the most striking of the ancient world. Altogether the group somewhat resembles that at Castel d'Asso, but is more extensive and far richer in external architecture.

Time has not left us a single built tomb in all these places, though there can be little doubt but that they once were numerous. Almost the only tomb of this class constructed in masonry known to exist, which in many respects is perhaps the most interesting of all, is found in Asia Minor, at Mylassa in Caria. In form it is something like the free standing rock-cut examples at Jerusalem. As shown in the woodcut (No. 292), it consists of a square base, which supports 12 columns, 8 of which support a dome, the other 4 merely completing the square. The dome itself is constructed in the same manner as all the Jaina domes are in India, being of the class illustrated by the diagrams in woodcuts No. 47 to 50, and, though ornamented with Roman details, is so unlike anything else ever built by that people, and so completely and perfectly what we find re-appearing 10 centuries afterwards in the far east, that we are forced to conclude that it belongs to a style once prevalent and long fixed in these lands, though it now stands as the sole representative of its class.



293. Tomb at Dugga. From a drawing by F. Catherwood.

Another example somewhat similar stands at the opposite extreme of what may be called the Roman Eastern world, from the locality of which we last spoke, at Dugga, near Tunis, in Africa. This, too, consists of a square base, taller than in the last example, and surmounted by 12 Ionic columns, but here merely used as ornaments

to support a cornice, the profile of which bears a remarkable resemblance to Egyptian forms. It was terminated apparently by a pyramid in steps, of which nothing now remains but the 4 head-stones of the corners, which serve to give character to the angles, which the simple pyramid so used always wants.

This and the St. Rémi tomb are perhaps the two most elegant examples of tombs which antiquity has left us, and those which might be most profitably studied for modern purposes.

DOMESTIC ARCHITECTURE.

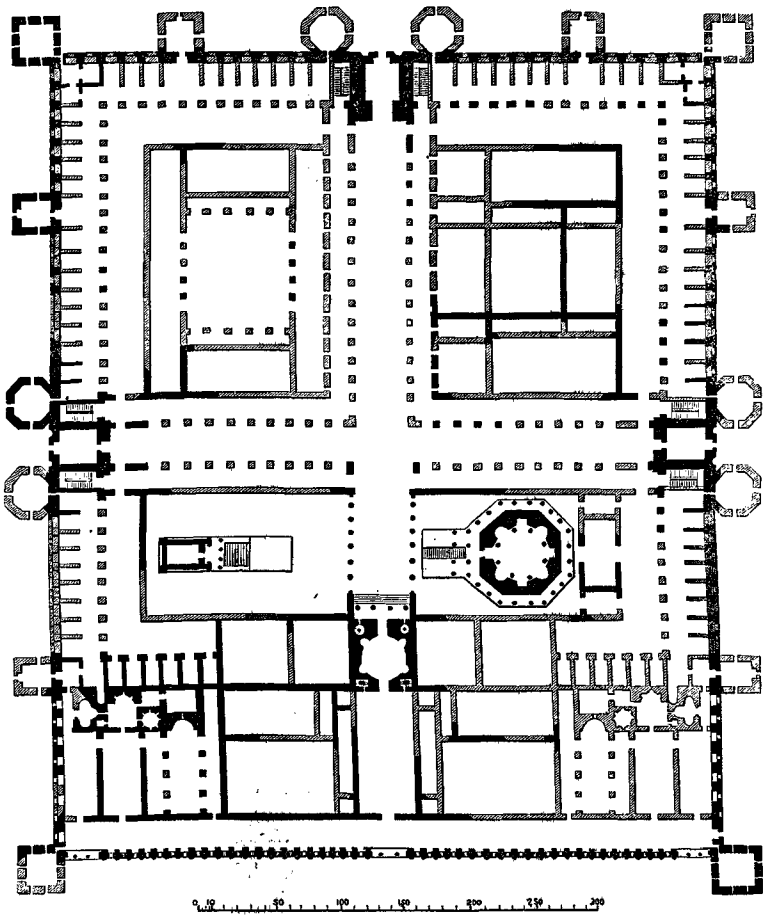
We know, not only from the descriptions and incidental notices that have come down to us, but also from the remains found at Pompeii and elsewhere, that the private dwellings of the Romans were characterised by that magnificence and splendour which we find in all their works, accompanied, probably, with more than the usual amount of bad taste. No palace except that at Spalatro has been preserved to our day, nor any building of such a class as to come under the head of domestic art; still, so much is to be learnt from what does remain, that it is impossible to pass over the subject altogether.

In Rome itself no ancient house—indeed no trace of a domestic edifice—exists except the Palace of the Cæsars on the Palatine Mount. Even this is now merely a heap of shapeless ruins, so much so as to have defied even the most imaginative of restorers to make anything of them except a vehicle for the display of their own ingenuity. The extent of these ruins, coupled with the descriptions that have been preserved, suffice to convince us that, of all the palaces ever built, either in the East or the West, this was probably the most magnificent and the most gorgeously adorned. Never in the world's history does it appear that so much wealth and so much power were at the command of one man as were held by the Cæsars; and never could the world's wealth have fallen into the hands of men more inclined to lavish it for their own personal gratification than these emperors were. Besides, they could ransack the whole world for plunder to adorn their buildings, and they could command the artists of Greece, and of all the subject kingdoms, to assist in rendering their golden palaces the most gorgeous that the world had then seen, or is likely ever to see again.

Notwithstanding all this splendour, this palace was probably as an architectural object inferior to the Thermæ. The thousand and one exigencies of private life rendered it impossible to impart to a residence —even to that of the world's master—the same character of grandeur as may be given to a building wholly devoted to show and public purposes. In its glory the Palace of the Cæsars must have been the world's wonder; but as a ruin deprived of its furniture and ephemeral splendour, it probably would present nothing either pleasing or instructive. We must not look for either beauty of proportion or perfection of construction, nor even for appropriateness of material, in the hastily constructed halls of men whose unbounded power was only equalled by the coarse vulgarity of their characters.

Spalatro.

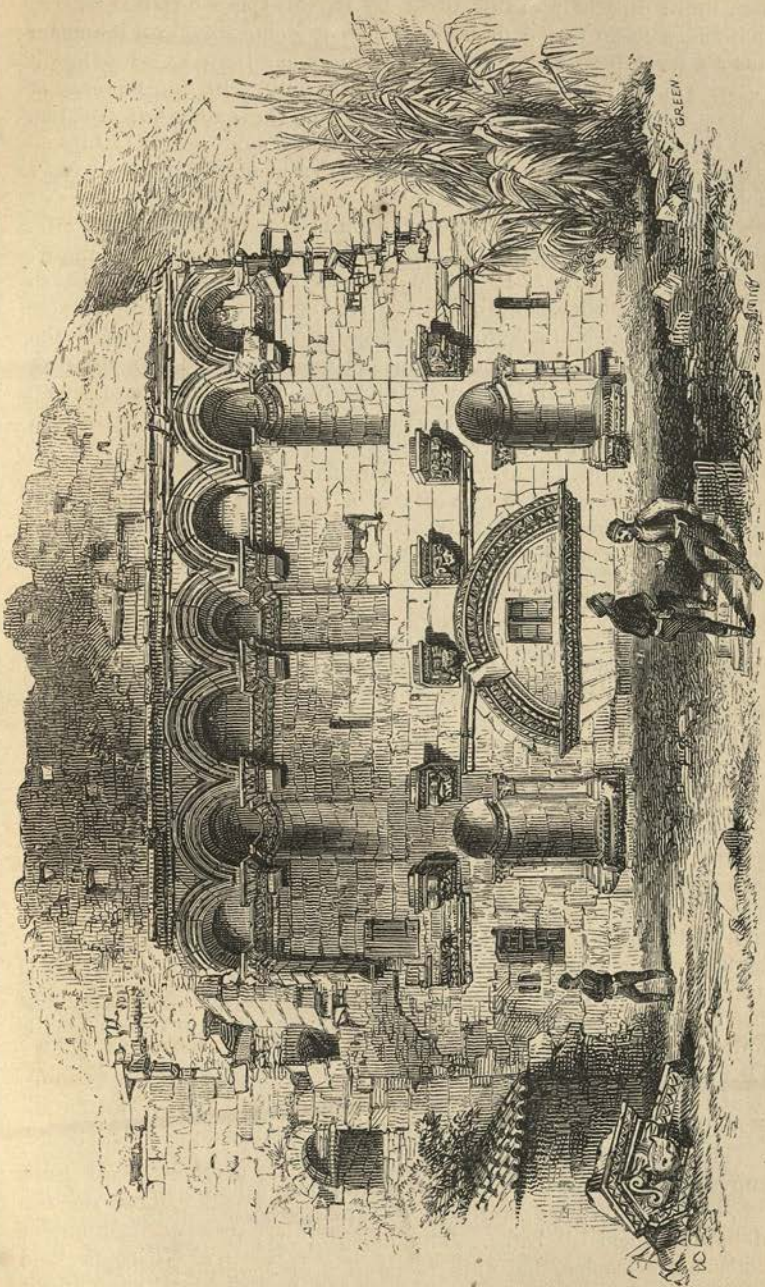
The only palace of the Roman world of which sufficient remains are still left to enable us to judge either of their extent or their arrangements is that which Diocletian built for himself at Spalatro, in Dalmatia, and in which he spent the remaining years of his life, after shaking off the cares of empire. It certainly gives us a most exalted



294. Palace of Diocletian at Spalatro. From Adams.

idea of what the splendour of the imperial palace at Rome must have been when we find one emperor—certainly neither the richest nor the most powerful—building, for his retirement, a villa in the country of almost exactly the same dimensions as the Escurial in Spain, and consequently surpassing in size, as it did in magnificence, most of the modern palaces of Europe.

It is uncertain how far it resembles or was copied from that in



295. Golden Gateway at Spalatro. From Sir Gardner Wilkinson's Dalmatia.

Rome, more especially as this must be regarded as a fortified palace, which there is no reason to believe that at Rome was, and its model seems to have been the prætorian camp rather than any habitation built within the protection of the walls of a city. In consequence of this its exterior is plain and solid, except on the side next the sea, where it was less liable to attack. The other 3 sides are only broken by the towers that flank them, and those that defend the great gates which open in the centre of each face.

The building is nearly a regular parallelogram, though not quite. The south side is that facing the sea, being 592 ft. from angle to angle; the one opposite only 570;[1] while the east and west sides measure each 698 ft., the whole building thus covering about 9½ English acres.

The principal entrance to the palace is on the north, called the Golden Gate, represented in the annexed woodcut (No. 295), showing all the peculiarities of Roman architecture in its last stage. The horizontal architrave still remains over the doorway, a useless ornament, under a bold discharging arch, which usurps its place and does its duty. Above this, a row of Corinthian columns, standing on brackets, supported the archivolts of a range of niches—a piece of pleasing decoration, it must be confessed, but one in which the original purpose of the column has been entirely overlooked or forgotten.

Entering this portal, we pass along a street ornamented with arcades on either side, till exactly in the centre of the building this is crossed at right angles by another similar street, proceeding from the so-called Iron and Brazen Gates, similar to the Golden Gate in design, but far less richly ornamented.

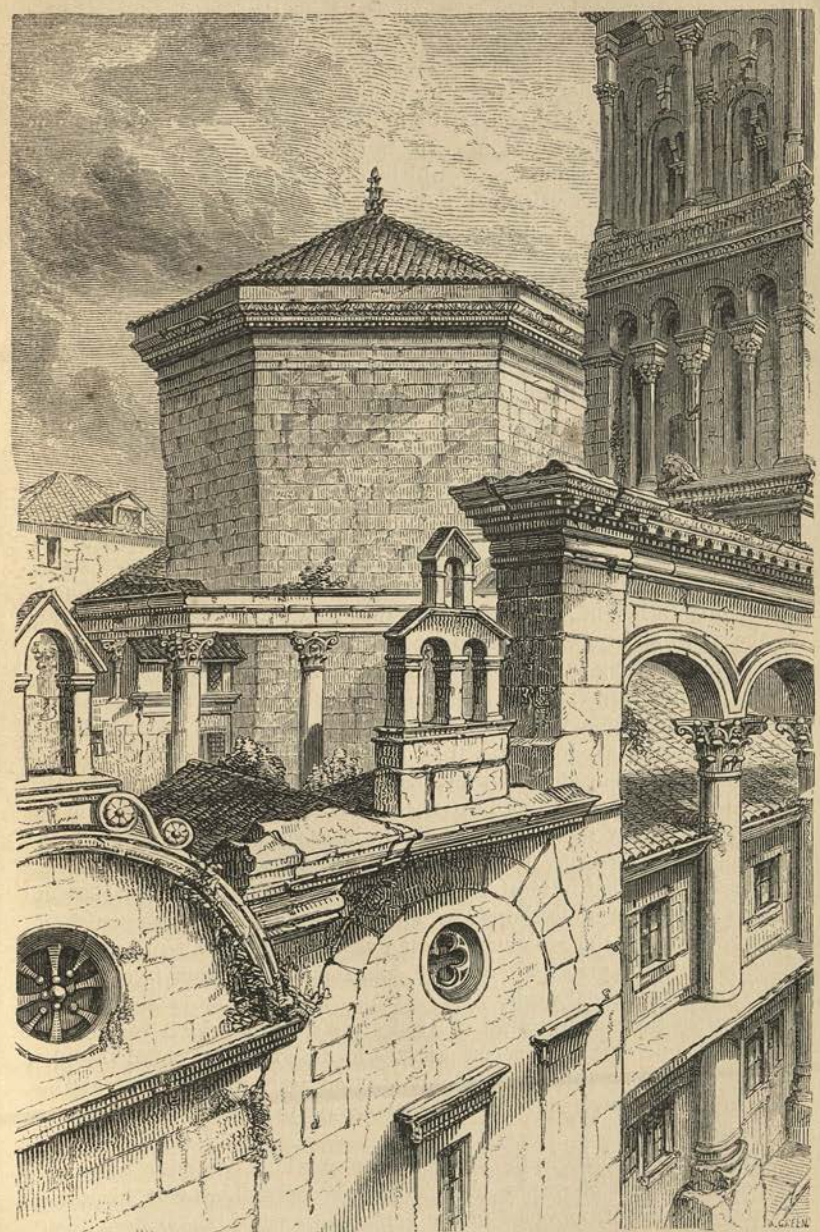
These streets divided the building nearly into 4 portions: the two northern ones are so much ruined that it is not now easy to say either what their plan was, or to what purpose they were dedicated; probably the one might be the lodgings of the guests, the other the residence of the principal officers of the household.

The whole of the southern half of the building was devoted to the palace properly so called. It contained 2 temples, as they are now designated. That on the right is said to have been dedicated to Jupiter, though, judging from its form, it seems rather as if intended as the mausoleum of the founder than as a temple of that god. As a temple it has been illustrated at a previous page.[2] Opposite to it is a small temple, dedicated, it is said, to Æsculapius.

Between these two is the arcade represented in woodcuts No. 246 and 296, at the upper end of which is the vestibule—circular, as all buildings dedicated to Vesta, or taking their name from that goddess, should be. This opened directly on to a magnificent suite of 9 apartments, occupying the principal part of the south front of the palace. Beyond these, on the right hand, were the private apartments of the emperor, and behind them his baths. The opposite side is restored as if it exactly corresponded, but this is more than doubtful; and, indeed,

[1] By an oversight this difference is not expressed in the woodcut.

[2] See pp. 313, 314.



296. Part of Central Arcade, and upper part of Temple, Spalatro. From Sir G. Wilkinson.

there is scarcely sufficient authority for many of the details shown in the plan, though they are, perhaps, sufficiently exact to convey a general idea of the arrangements of a Roman imperial palace.

Perhaps, however, the most splendid feature in this palace was the great southern gallery, 515 ft. in length by 24 in width, extending along the whole seaward face of the building. Besides its own intrinsic beauty as an architectural feature, it evinces an appreciation of the beauties of nature which one would hardly expect in a Roman. This great gallery is the principal point in the design, and commands a view well worthy that such a gallery should be built for its complete enjoyment.

Failing in finding any example of domestic architecture in Rome, we turn to Pompeii and Herculaneum, where we find numerous and most interesting examples of houses of all classes, except, perhaps, the best; for there is nothing there to compare with the Laurentian villa of Pliny, and some others of which descriptions have come down to us; and besides this, Pompeii was far more a Grecian than a Roman city, and its buildings ought to be considered rather as illustrative of those of Greece, or at least of Magna-Græcia, than of anything found to the northward. Still they belong to the Roman age, and, except in taste and in minor arrangements, we have no reason to doubt that they did resemble those of Rome, at least sufficiently so for illustration.

With scarcely an exception, all the houses of Pompeii were of one story only in height. It is true that in some we find staircases leading to the roof, and traces of an upper story, but they seem to have been places for washing and drying clothes, or some such domestic purpose, rather than living or even sleeping rooms. All the principal apartments, at all events, were certainly on the ground floor. As an almost inevitable corollary from this, they all faced inwards, and were lighted from court-yards or *atria*, and not from the outside; for, with a people who had not glass to put into their windows, it was impossible to enjoy privacy or security without at the same time excluding both light and air, except by lighting their rooms from the interior. Hence it arose that in most instances the outside of the better class of houses was given up to shops and smaller dwellings, which opened on the street, while the residence itself was wholly hidden from view by them, except the principal entrance, and sometimes one or two private doors that opened outwards.

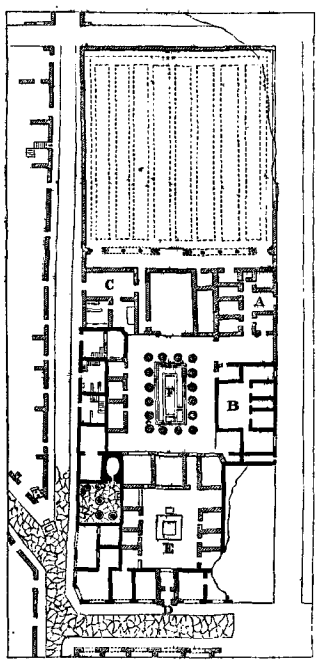
Even in the smallest class of tradesmen's houses which opened on the street, one apartment seems always to have been unroofed to light at least two rooms on each side of it, used as bedrooms; but as the roofs of all are now gone, it is not easy always to determine which was so treated.

It is certain that, in the smallest houses which can have belonged to persons at all above the class of shopkeepers, there was always a central apartment, unroofed in the centre, into which the others open. Sometimes this was covered by 2 beams placed in one direction, and 2 crossing them at right angles, framing the roof into 9 compartments, generally of unequal dimensions, the central one being open, and with

a corresponding sinking in the floor to receive the rain and drainage which inevitably came through it. When this court was of any extent, 4 pillars were required at the intersection of the beams, or angles of the opening, to support the roof. In larger courts 8, 12, 16, or more columns were so employed, often apparently more as decorative objects than as required by the constructive necessities of the case, and very frequently the numbers were unequal, even on opposite sides. Frequently the angles were not right angles, and the pillars spaced unequally with a careless disregard of symmetry that strikes us as strange, though in such objects this was perhaps better than cold and formal regularity, and more productive of grace and beauty. Besides these courts, there generally existed in the rear of the house a court bounded by a dead wall opposite, which in the smaller houses was painted, to resemble the garden which the larger mansions possessed in this direction. The apartments looking on this were of course perfectly private, which cannot be said of any of those looking inwards on the *atrium*.

The house called that of Pansa at Pompeii is a good illustration of those peculiarities, and as one of the most regular is generally chosen for the purpose of illustration.

In the annexed plan (woodcut No. 297) all the parts that do not belong to the principal mansion are shaded darker except the doubtful part marked A, which may either have been a separate house, or the women's apartments belonging to the principal one, or, what is probable, may have been designed so as to be used for either purpose. B is certainly a separate house, and the whole of the remainder of this side, of the front, and of the third side, till we come opposite to A, was let off as shops. At C we have the kitchen and servants' apartments, with a private entrance to the street, and an opening also to the principal peristyle of the house.



297. House of Pansa at Pompeii. From Gell's Pompeii. Scale 100 ft. to 1 in.

Returning to the principal entrance or front door D, you enter through a short passage into the outer court E, on each side of which are several small apartments, used either by the inferior members of the household or for guests. A wider passage than the entrance leads from this to the peristyle, or principal apartment of the house. On the left hand are several small rooms, used no doubt as sleeping apartments, and probably closed by half-doors open above and below, so as to admit air and light, while preserving sufficient privacy, for Roman tastes at

least. In front and on the right hand are 2 larger rooms, either of which may have been the triclinium or dining-room, the other being what we should call the drawing-room of the house. A passage between the kitchen and the central room leads to a verandah which crosses the whole length of the house, and is open to the garden beyond.

As will be observed, architectural effect has been carefully studied in this design, a vista nearly 300 ft. in length being obtained from the outer door to the garden wall, varied by a pleasing play of light and shade, and displaying a gradually increasing degree of spaciousness and architectural richness as we advance. All these points must have been productive of the most pleasing effect when complete, and of more beauty than has been attained in any modern dwelling of like dimensions that I am acquainted with.

Generally speaking the architectural details of the Pompeian houses are carelessly and ungracefully moulded, though it cannot be denied that sometimes a certain elegance of feeling runs through them that pleases in spite of our better judgment. It was not, however, on form that they depended for their effect; and consequently it is not by that that they must be judged. The whole architecture of the house was coloured, but even this was not considered so important as the paintings which covered the flat surfaces of the walls. Comparing the Pompeian decoration with that of the baths of Titus, the only specimen of the same age and class found in Rome, it must be admitted that the Pompeian examples show a more correct taste, not only in the choice but in the application of the ornaments used, though in the execution there is often that difference that might be expected between paintings executed for a private individual and those for the Emperor of the Roman world. Notwithstanding this, these paintings, so wonderfully preserved in this small provincial town, are even now the best specimens we possess of mural decoration. They excel the ornamentation of the Alhambra as being more varied and more intellectual. For the same reason they are superior to the works of the same class executed by the Moslems in Egypt and Persia, and they are far superior to the rude attempts of the Gothic architects in the middle ages; still they are probably as inferior to what the Greeks did in their best days as the pillars of the Pompeian peristyles are to the porticos of the Parthenon. But though doubtless far inferior to their originals, those at Pompeii are direct imitations of true Greek decorative forms; and it is through them alone that we can hope even to guess at the exquisite beauty to which polychromatic architecture once attained, but which we can scarcely venture to hope that it will ever attain again.

One curious point, which has hitherto been too much overlooked, is that in Pompeii there are two perfectly distinct styles of decoration. One of these is purely Etruscan, both in form and colour, and such as is only found in the tombs or on the authentic works of the Etruscans. The other is no less essentially Greek, both in design and colour: it is far more common than the Etruscan form, and always easily to be distinguished from it. The last-mentioned or Greek style of decoration may be again divided into two varieties: one, the most common, con-

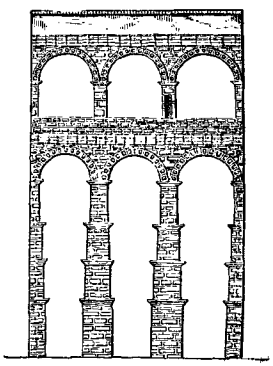
sisting of ornaments directly copied from Greek models; the other with a considerable infusion of Roman forms. This Romanised variety of Greek decoration represents an attenuated and lean style of architecture, which I conceive could only have come into fashion from the continued use of iron or bronze, or other metallic substances, for pillars and architectural members. Vitruvius reprobates it; and in a later age Cassiodorus speaks of it in a manner which shows that it was practised in his time. The frequency of this style of ornament, both at Pompeii and in the baths of Titus, proves it to have been a very favourite style at that time. This being the case, it must have either been a representation of metallic pillars and other architectural objects then in use, or it must have led to the adoption of such a style copied from the painted decorations. This is a new subject, and could not be made clear, except at considerable length and with the assistance of many drawings. I look upon it, however, as an almost undoubted fact that the Romans did use metal as a constructive material. Were it only that columns of extreme tenuity are represented in these paintings, we might be inclined to ascribe it to mere incorrect drawing; but the whole style of ornament here shown is such as is never found in stone or brick pillars, and could only be executed in metal. Besides this, the pillars in question are always represented in the decorations as simply gilt or bronzed, while the representations of stone pillars are coloured. All this evidence goes to prove that a style of art once existed consisting of the employment of metal for the principal features, all material traces of which are now lost. The disappearance of all remains of such a style is easily accounted for by the perishable nature of iron from rust, and the value and consequent insecurity of bronze and similar metals. We know that much bronze has been stolen, even in recent days, from the Pantheon and other buildings which are known to have been adorned with it.

Another thing which we learn from these paintings is, that though the necessities of street architecture compelled these city mansions to take a rectilinear outline, whenever the Roman architects built in the country they indulged in a picturesque variety of outline and of form which they perhaps carried farther than even the Gothic architects of the middle ages. This indeed we might have expected, from the carelessness in respect to regularity in the town-houses; but these were interiors, and, were it not for the painted representations of houses, we should have no means of judging how the same architects would treat an exterior. From this source, however, we learn that in the exterior arrangements, in situations where they were not cramped by confined space, the plan would have been totally free from all stiffness and formality. In this respect Roman taste coincided with that of all true architecture in all parts of the world. It would scarcely have deserved to be noticed, but that in modern times the fault of too great regularity of external plan is painfully prevalent—a fault originated by the architects of the Renaissance, who did not perceive that it was a fatal mistake to treat a number of chambers grouped together precisely as if they were a single apartment.

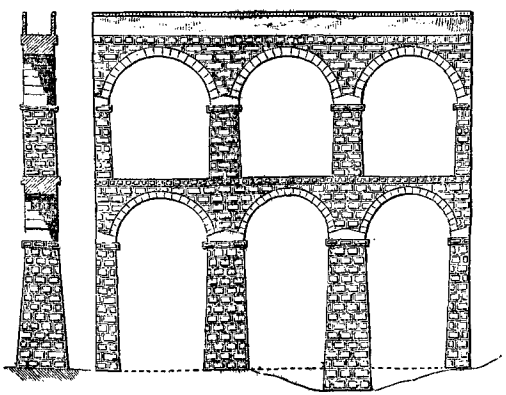
Bridges and Aqueducts.

Perhaps the most satisfactory works of the Romans are those which we consider as belonging to civil engineering rather than to architecture. The distinction, however, was not known in their earlier days. The Romans set about works of this class with a purpose-like earnestness that always ensured success, and executed them on a scale which leaves nothing to be desired; while at the same time they entirely avoided that vulgarity which their want of refinement allowed almost inevitably to appear in more delicate or more ornate buildings. Their engineering works also were free from that degree of incompleteness which is inseparable from the state of transition in which their architecture was during the whole period of the Empire. It is owing to these causes that the substructions of the Appian Way strike every beholder with admiration and astonishment; and nothing impresses the traveller more, on visiting the once imperial city, than the long lines of aqueducts that are seen everywhere stretching across the now arid plain of the Campagna. It is true they are mere lines of brick arches, devoid of ornament or any attempt at architecture properly so called; but they are so well adapted to the purpose for which they were designed, so grand in conception, and so perfect in execution, that in spite of their want of architectural character they are among the most beautiful of the remains of Roman buildings.

The aqueducts were not all so devoid of architectural design as those of the Campagna. That, for instance, known as the Pont du Gard, built to convey water to the town of Nismes in France, is one of the most striking works of antiquity. Its height above the stream is about 180 ft., divided into 2 tiers of larger arches surmounted by a range of smaller ones, giving the structure the same finish and effect that an entablature and cornice gives to a long range of columns, and without one single ornament being introduced, or any member that was not absolutely wanted. This arrangement converts what is a mere utilitarian work into an architectural screen of a beauty hitherto unrivalled in its class.



298. Aqueduct of Segovia. Scale 50 ft. to 1 in.

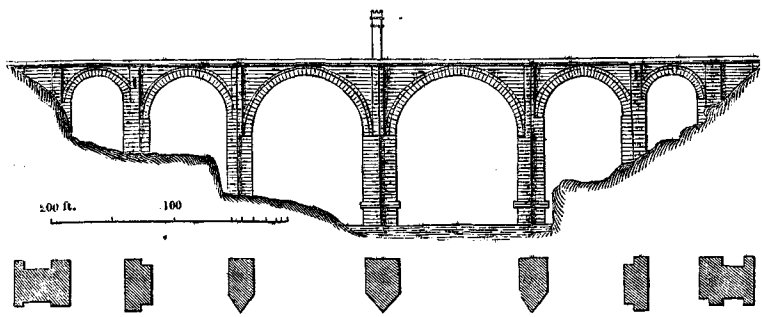


299. Aqueduct of Tarragona. Scale 50 ft. to 1 in.

The aqueducts of Segovia and Tarragona in Spain, though not perhaps so grand, are quite as elegant and appropriate as this; and if they stood across a line of well wooded and watered valleys, might form as beautiful objects. Unfortunately the effect is much marred by the houses and other objects that crowd their bases. Both these rise to about 100 ft. above the level of their foundation in the centre. That of Segovia is raised on light piers, whose effect is perhaps somewhat spoiled by numerous offsets, and the upper tier is perhaps too light for the lower. These defects are avoided at Tarragona, the central arches of which are shown in the annexed woodcut. In this example the proportion of the upper to the lower arcade is more perfect, and the whole bears a character of lightness combined with constructive solidity and elegance unrivalled, so far as I know, in any other work of its class. It wants, however, the grandeur of the Pont du Gard; for though its length is about the same, exceeding 800 ft., it has neither its height nor the impression of power given by the great arches of that building, especially when contrasted with the smaller ones.

The Roman bridges were designed on the same grand scale as their aqueducts, though from their nature they of course could not possess the same grace and lightness. This was more than compensated by the inherent solidity and the expression of power that was imparted by the Romans to all these structures. They seem to have been designed to last for ever; and but for the violence of man, it would be hardly possible to set limits to their durability. Many still remain in almost every corner of the Roman Empire; and wherever found are easily recognised by the unmistakeable impress of Roman grandeur which is stamped upon them.

One of the most remarkable of these is that which Trajan erected at Alcantara, in Spain, represented in the annexed woodcut. The road-



300. Bridge of Trajan at Alcantara, in Spain.

way is perfectly level, as is generally the case in Roman bridges, though the mode by which this is obtained, of springing the arches from different levels, is perhaps not the most pleasing. To us at least it is unfamiliar, and has never, I think, been adopted in modern times. In such a case we should either have made the arches all equal—a mistake, considering their different heights—or have built solidly over the

smaller arches to bring up the level, which would have been a far greater error in construction than the other is in taste. The bridge consists of 6 arches, the whole length of the roadway being 650 ft.; the 2 central arches are about 100 ft. span; the roadway is 140 ft. above the level of the stream which it crosses. The piers are well proportioned and graceful; and altogether the work is as fine and as tasteful an example of bridge-building as can be found anywhere, even in these days of engineering activity.

The bridge which the same Emperor erected over the Danube was a far more difficult work in an engineering point of view; but the superstructure being of wood, resting only on stone piers, it would necessarily have possessed much less architectural beauty than this, or indeed than many others.

These examples must suffice of this class of Roman works, which is so typical of the style that it was impossible to omit the subject altogether, though it scarcely belongs in strictness to the objects of this book. The bridges and aqueducts of the Romans richly deserve the attention of the architect, not only because they are in fact the only works which the Romans, either from taste or from social position, were enabled to carry out without affectation, and with all their originality and power, but also because it was in building these works that the Romans acquired that constructive skill and largeness of proportion which enabled them to grasp at such large dimensions, to vault such spaces, and to give to their buildings generally that size and impress of power which form their chief if not their only merit. It was this too that enabled them to invent that new style of vaulted buildings which at one period of the middle ages promised to reach a degree of perfection which no architecture of the world had ever attained. The Gothic style, it is true, perished at a time when it was very far from completed; but it is a point of no small interest to know where and how it was invented. We shall afterwards have to trace how far it advanced towards that perfection at which it aimed, but to which it never reached. Strangely enough it failed solely because of the revival and the pernicious influence of that very parent style to which it owed its birth, and whose own growth and maturity we have described in the grandeur of the edifices reared at Rome in the first centuries of the Empire.

BOOK VIII.

SASSANIAN ARCHITECTURE.

CHAPTER I.

SASSANIAN ART.

CONTENTS.

Historical notice — Palaces of Diarbekr and Al Hadhr — Domes — Serbistan — Firouzabad — Tak Kesra.

CHRONOLOGICAL MEMORANDA.

	DATES.		DATES.
Ardeshir or Artaxerxes establishes Sassanian dynasty	A.D. 223	Firouzabad (about)	450
Diarbekr and Al Hadhr built (about)	250	Khosru Nushirvan begins to reign	531
Serbistan (about)	350	—— builds palace at Ctesiphon (about)	550
Bahram Gour begins to reign	420	Conquest of Persia by Arabs	641

THERE is no hiatus in the whole history of architecture more complete than that which occurs in Central Asia during the 10 centuries which elapsed from the conquest of that country by Alexander the Great till the time when it fell under the yoke of the Mahometans. At the same time there are few gaps which it would be more interesting to fill up. For though we are enabled from our knowledge of the history of Roman art to trace every step of the change which took place in the transformation of the classic style of Rome to that of the Mediæval Gothic, we are wholly without the means of following out the same process in the East. The destruction of Alexandria, and the disappearance of Seleucia and Ctesiphon and all the other great cities of Asia, have left us almost wholly without materials for this purpose. In consequence of this many of the forms which architecture took during the middle ages in the eastern half of the Roman Empire must remain to us inexplicable riddles, unless it should happen that a more careful examination of provincial examples may supply the required information. It is more than probable that such cities as Diarbekr, Mardin, Nisibin, and others situated near the hills and where stone was currently used, may afford many examples for this purpose when looked for, and there are no doubt many very early churches in Asia Minor

and Armenia which would supply some at least of the links in the now broken chain.

It is true nevertheless that the study of Roman art explains much of what we find in the first ages of that of Byzantium. But the transformation of the former into the latter style was owing to the introduction of a new element which has hitherto been unheeded, and a knowledge of which can only be supplied from Central Asia.

The want of this knowledge is not so much felt in studying the buildings of Constantinople itself as in those of Armenia and Asia Minor. In the capital the influence of Rome always predominated, but farther east it very early gave place to the Asiatic forms whose influence soon obliterated all trace of western art.

It is only when we shall acquire a knowledge of the steps of the transformation in the East as well as in the West that we shall understand the Christian Byzantine style, which is almost equally important with the Gothic, or know from whence and how that Eastern style arose: at present we are very far from having the information requisite for the purpose.

The dearth of monuments is almost absolute during the first half of these dark ages of the Persian Empire. During that period the throne was occupied by the Seleucidæ and Arsacidæ, Grecian and Parthian strangers, who occupied the country more as a conquered province than as their settled home, and consequently cared little to adorn it with great or lasting monuments of art.

Their cities were built principally out of the materials of the older capitals, and adorned with architectural ornaments stolen from their edifices. These materials too being merely sunburnt bricks, we cannot wonder that all the principal buildings, not only of Susa and Babylon, but also of Seleucia and Ctesiphon, have wholly disappeared.

Had these cities been situated farther north, and had stone been more generally employed in their construction, the case might have been different; but the sunburnt bricks and wooden pillars which seem always to have been the staple material of construction in the southern parts of the valley of the Euphrates perish almost as soon as the buildings in which they are used are deserted, and in a few years leave nothing but a mass of undefinable rubbish.

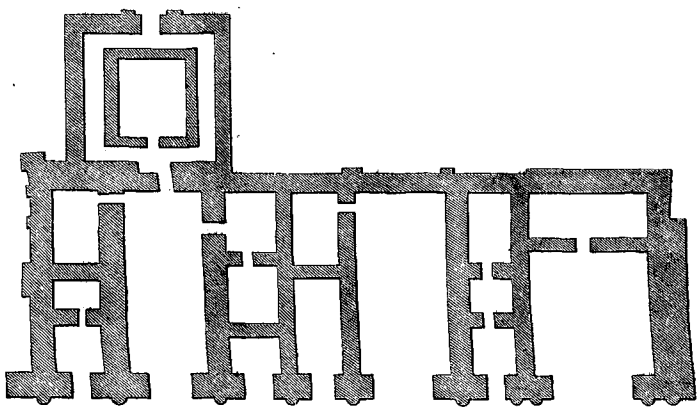
The only two buildings which are known to exist belonging to this period are the ruins of two palaces, one at Diarbekr, the other at Al Hadhr. Both owe their preservation to the circumstance of their being situated near the hills, and consequently to their being built of the stone of the neighbourhood.

The building at Diarbekr is known as the palace of Tigranes, though certainly more modern than his age. It consists principally of a façade two stories in height, ornamented with Corinthian pilasters and three quarter columns of a debased but picturesque style. These are surmounted by very deep entablatures, every member of which is overloaded with minute and elaborate carving, displaying all the Roman ornaments, but seldom in their right places, and far too crowded to be pleasing.

Between the pillars are doorways and windows, some crowned with pointed arches, others with a rude trefoil, but none with the plain square architrave of the classic styles. Altogether the building is such that if it were found in France no one would hesitate to ascribe it to the reign of Francis I.; and it would be difficult to point out any feature in this Eastern example which would not perfectly agree with such an ascription. So remarkably similar were the forms which arose in different parts of the world immediately out of the Classic style, in the middle ages, both to one another and to those which prevailed when, during the period of the Renaissance, architecture passed back to the pseudo-classic again.

The Golden Gateway and the mosque of Omar at Jerusalem are the buildings in the East which most resemble this one at Diarbekr in style. Those examples certainly belong to the age of Constantine, and the exuberance of ornament at Diarbekr, and the admixture of barbarian details, would lead us to suppose that this palace was more modern than those buildings at Jerusalem. The true explanation, however, most probably is that this building is situated in a remote province, where Roman influence must always have been weak, and where consequently its builders emancipated themselves earlier from the classic forms than they could do in countries longer occupied by the Romans. Though not so early as the time of Tigranes, it is probable that this building was erected at least a century before that of Constantine.

The other building, that at Al Hadhr, is situated in the plain, about 30 miles from the Tigris, nearly west from the ruins of Kaleh Sherghat.



301. Plan of Palace at Al Hadhr. From a Sketch by Mr. Layard. Scale 100 ft. to 1 in.

The city itself is circular in plan, nearly an English mile in diameter, and surrounded by a stone wall with towers at intervals. In the centre of this stands a walled enclosure, nearly square in plan, about 700 ft. by 800. This is again subdivided into an outer and inner court by a wall across its centre. The outer court is unencumbered

by buildings, the inner nearly filled with them. The principal of these is that represented in woodcut No. 301. It consists of three large and four smaller halls placed side by side, with various smaller apartments in the rear of these. All these halls are roofed by semicircular tunnel vaults, without ribs or other ornament, and they are all entirely open in front, all the light and air being admitted from this one end.

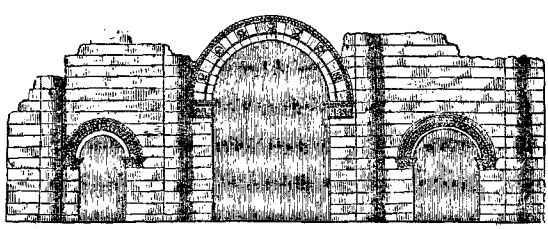
There can be very little doubt but that these halls are copies, or intended to be so, of the halls of the old Assyrian palaces; but that strange mania for vaulted roofs which seized on all the nations of the East as well as on those of the West during the middle ages led the architect on to a new class of arrangements, which renders the resemblance by no means apparent at first sight.

The old halls had almost invariably their entrances on the longer side; but with a vault this would have required immense abutments; and without intersecting vaults, which were not then invented, would even then have been difficult.

The most obvious mode of meeting the difficulty was that adopted here of using the halls as abutments the one to the other, like the arches of a bridge; so that, if the two external arches were firm, all the rest were safe. This was provided for by making the outer halls smaller, as shown in the elevation (woodcut No. 302), or by strengthening the outer wall. But even then the architect seems to have shrunk from weakening the intermediate walls by making too many openings in them. Those which do exist are small and infrequent; so that there is generally only one entrance to each apartment, and that so narrow as to seem incongruous with the size of the room to which it leads.

It is by no means clear to what use the square apartment in the rear with the double wall was applied. It may have been a temple, but more probably contained a stair or inclined plane leading to the roof or upper rooms, which almost certainly existed over the smaller halls at least.

All the details of the building are copied from the Roman, the archivolts and pilasters almost literally so, but still so rudely executed as to prove that it was not done under the direct superintendence of a Roman artist. This is even more evident with regard to the griffins and scroll-work, and the acanthus-leaves which ornament the capitals and friezes. The most peculiar ornament, however, is the range of masks which are carried round all the archivolts of the arches. The only thing known at all similar is the celebrated arch at Volterra with three masks; but here these are infinitely more numerous over



302. Elevation of part of the Palace at Al Hadhr. Scale 50 ft. to 1 in.

all the arches, and form in fact the principal features of the decorations.

Even tradition is silent regarding the date of these remarkable ruins. The style of architecture, however, certainly points to a period anterior to the age of Constantine, but not so early as the time of Aurelian and the flourishing days of Palmyra. They are probably nearly coeval with those at Diarbekr. It is difficult, however, to speak at all confidently, as we are so entirely ignorant of the local circumstances of the place at the time the buildings were erected, and local peculiarities often influence a style as much as the age in which it flourished.

With the accession of the Sassanians, A.D. 223, Persia regained much of that power and stability to which she had been so long a stranger. The capture of the Roman Emperor Valerian by the 2nd king of the race, the conquest of Armenia and victories over Galerius by the 7th, and the exploits of the 14th, Bahram Gaur, and his visit to India and alliance with its kings, all point to extended power abroad; while the improvement in the fine arts at home indicates returning prosperity and a degree of security unknown since the fall of the Achæmenidæ.

These kings seem to have been of native race, and claimed descent from the older dynasties; at all events they restored the ancient religion, and many of the habits and customs with which we are familiar as existing before the time of Alexander the Great.

As before remarked, the fire-worship does not admit of temples, and we consequently miss that class of buildings which in all ages best illustrates the beauties of architecture; and it is only in a few scattered remains of palaces that we are able to trace the progress of the style. Such as they are, they indicate considerable originality and power, but at the same time a state of society when attention to security hardly allowed the architect the free exercise of the more delicate ornaments of his art.

The Sassanians took up the style where it was left by the builders of Al Hadhr, but we only find it after a long interval of time, during which changes had taken place which altered it to a considerable extent, and made it in fact into a new and complete style.

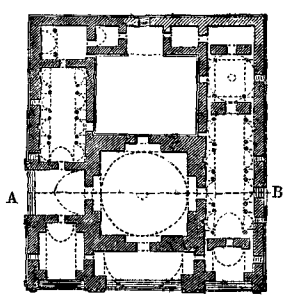
They retained the great tunnel-like halls of Al Hadhr, but only as entrances. They cut bold arches through the dividing walls, so as to form them into lateral suites. But above all they learnt to place domes on the intersections of their halls, not resting on drums, but on *pendentives*,[1] and did not even attempt to bring down simulated lines of support to the ground. Besides all these constructive peculiarities, they lost all trace of Roman detail, but adopted a system of long reed-like pilasters, extending from the ground to the cornice, below which

[1] These are expedients for filling up the corners of square lower stories on which it is intended to place a circular superstructure. They somewhat resemble very large brackets or corbels placed in an angle. Examples of them will be found in the chapter on Mahometan Architecture in India, further on.

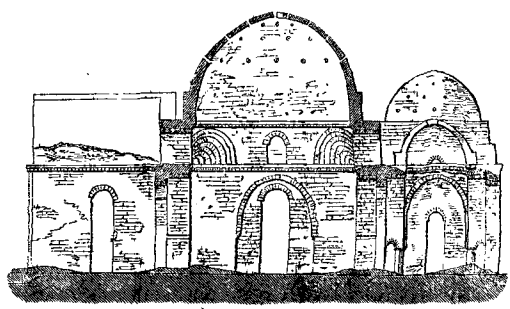
they were joined by small semicircular arches. They in short adopted all the peculiarities which are found in the Byzantine style as carried out at a later age in Armenia and the East. We must know more of this style, and be able to ascribe authentic dates to such examples as we are acquainted with, before we can decide whether the Sassanians borrowed the style from the Eastern Romans, or whether they were in fact the inventors from whom the architects of the more western nations took the hints which they afterwards so much improved upon.

The various steps by which the Romans advanced from the construction of buildings like the Pantheon to that of the church of St. Sophia at Constantinople are so consecutive and so easily traced, that they are intelligible in themselves without the necessity of seeking for any foreign element which may have affected them. If it really was so, and the architecture of Constantinople was not influenced from the East, we must admit that the Sassanian was an independent and simultaneous invention, possessing characteristics well worthy of study. It is quite certain too that this style had a direct influence on the Christian and Moslem styles of Asia, which exhibit many features which they could not have derived from any of the more western styles.

A few examples will render this clearer than it can be made in words. The plan and section (woodcuts No. 303 and No. 304) of a



303. Plan of Palace at Serbistan. Scale 100 ft. to 1 in.



304. Section on line A B of Palace at Serbistan. From a drawing in Flandin and Coste's Voyage en Perse. Scale 50 ft. to 1 in.

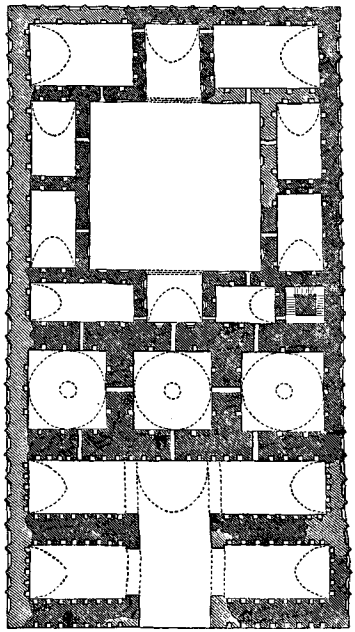
small but interesting palace at Serbistan will explain most of the peculiarities of the style. The entrances, it will be observed, are deep tunnel-like arches, but the centre is covered by a dome resting on pendentives, not filling up the angles by a great bracket, as was usual with the Romans, but constructed by throwing a series of arches across them, as shown in the woodcut, so as to convert the square into the circular form required. The dome too is elliptical, not semicircular, and is the next step to the pointed or conical dome, which was necessarily introduced in the more rainy climates further north. Being of brick, the building depended externally on stucco for its ornaments; and this having perished, we are left without the means of judging of its details or ornamental features.

In the lateral halls, pillars are placed at some distance from the walls, from which heavy transverse ribs spring. The builders thus

obtained the means of counteracting the thrust of the vault, without breaking the outline by buttresses externally, and without occupying much room on the floor, while at the same time these projections added considerably to the architectural effect of the interior. The date of this building is not correctly known, but most probably it belongs to the age of Shapour in the middle of the third century.

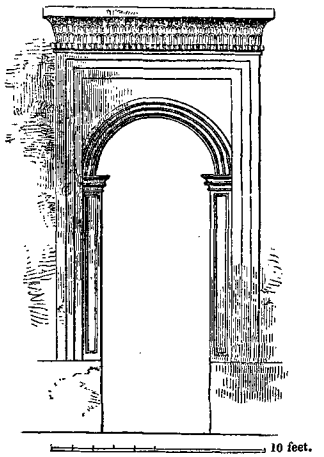
The palace at Firouzabad is probably a century more modern, and erected on a far more magnificent scale, being in fact the typical building of the style, so far at least as we at present know.

As will be seen in the plan (woodcut No. 305) the great central entrance opens laterally into two side chambers, and these into a suite of three splendid domed apartments, occupying the whole width of the building. Beyond this is an inner court, surrounded by apartments all opening upon it.



305. Plan of Palace at Firouzabad. From a drawing by Flandin and Coste. Scale 100 ft. to 1 in.

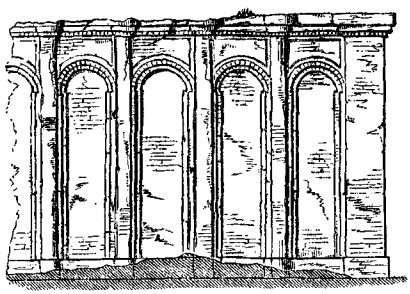
As will be perceived from the woodcut No. 306, representing one of the doorways in the domed halls, the details have nothing Roman about them, but are borrowed directly from Persepolis, with so little change that the style, so far as we can now judge, is almost an exact reproduction. The portion of the exterior represented in woodcut No. 307 tells the same tale, though for its prototype we must go back still further to the ruins at Wurka—the building called Wuswus at that place (see page 185) being a palace arranged very similarly to these, and adorned externally by panellings and reeded pilasters, differing from these buildings only in detail and arrangement, but in all essentials so like them as to prove that the Sassanians borrowed most of their peculiarities from earlier native examples.



306. Doorway at Firouzabad. From Flandin and Coste.

The building itself is a perfectly regular parallelogram, 332 ft. by 180, without a single break, or even an opening of any sort, except

the one great arch of the entrance; and externally it has no ornament but the repetition of the tall pilasters and narrow arches represented in woodcut No. 307. Its aspect is thus simple and severe, but more like a gigantic Bastile than the palace of a gay pavilion-loving people like the Persians.

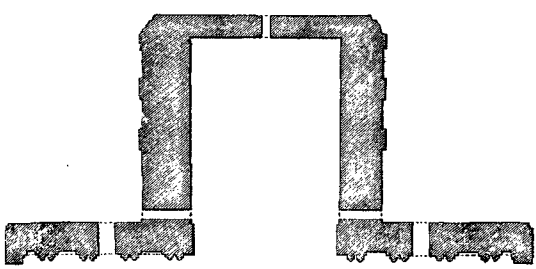


307. Part of External Wall, Firouzabad. No scale.

Internally the arrangement of the halls is simple and appropriate, and, though somewhat too formal, is dignified and capable of considerable architectural display. On the whole, however, its formality is perhaps less pleasing than the more picturesque arrangements of the palace at Serbistan last described.

Another century probably elapsed before Khosru (Nushirvan) commenced the most daring, though certainly not the most beautiful, building ever attempted by any of his race; for to him we must ascribe the well-known "Tâk Kesra" (woodcuts No. 308 and No. 309), the only important ruin that now marks the site of the Ctesiphon of the Greeks—the great Madain of the Arabian conquerors.

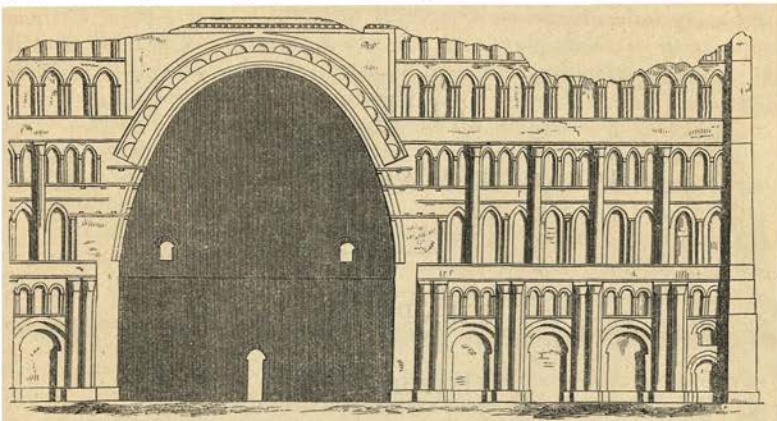
As it is, it is only a fragment of a palace, a façade similar in arrangement to that at Firouzabad, but on a much larger scale, its width being 370 ft., its height 105. Instead of the plain circular arch of the earlier example, the architect here has attempted the section of one of his domes—hoping thus to avoid some, at least, of the lateral thrust—to obtain, in short, by an ellipse what the Gothic architects managed by the pointed arch. As a mere scientific point of construction it is not clear that the Sassanian did not take the best mode of attaining his end; but to our eyes, at least, it appears fortunate that the Gothic architects had other models before them, or they might have copied what perhaps even their ability would never have rendered a beauty.



308. Plan of Tâk Kesra at Ctesiphon. From Flandin and Coste. Scale 100 ft. to 1 in.

Another detail in which this building contrasts most painfully with the last described is that, instead of the tall, simple, and elegantly-shaped pilasters that adorned its exterior, we here find a number of stories of blind arches superimposed the one on the other without any apparent motive, and certainly without any compensating degree of elegance. The foiling of small arches, however, round the great one

is curious, and points to a mode of decoration which subsequently played an important part in the history of architecture.[1]



309. Elevation of Great Arch of Tâk Kesra at Ctesiphon. Scale 50 ft. to 1 in.

Though it may not perhaps be beautiful, there is something certainly grand in a great vaulted entrance, 72 ft. wide by 85 ft. in height, and 115 in depth, though it makes the entrance at the inner end and all the adjoining parts look singularly small. It would have required the rest of the palace to have been carried out on an unheard-of scale to compensate for this defect. The Saracenic architects got over the difficulty by making the great portal a semidome, and by cutting it up with ornaments and details, so that the doorway looked as large as was required for the space it occupied. Here, in the parent form, all is perfectly plain in the interior, and painting only could have been employed to relieve its nakedness, which however it never could have done effectually.

Taking it altogether the building is interesting as containing the germs of much that followed, rather than for any intrinsic merit of its own. The same is perhaps true of the style to which it belongs. If properly worked out and illustrated it would probably explain nearly all the difficulties of the Eastern forms of the Byzantine style; and there can be little doubt but that ample materials exist for the purpose, and will be made available as soon as attention is fairly directed to the subject.

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[1] These 5 buildings, taking the first two as one, probably date as near as may be one century from each other, thus—

Diarbekr	A.D. 250
Al Hadhr	250
Serbistan	350
Firouzabad	A.D. 450
Ctesiphon	550

A bare skeleton which it will require much time and labour to clothe with flesh and restore to life.

BOOK IX.

SARACENIC ARCHITECTURE.

CHAPTER I.

INTRODUCTION.

The first century of the Hejra forms a chapter in the history of mankind as startling from the brilliancy of its events as it is astonishing from the permanence of the results attained. Whether we consider the first outburst of Mahometanism as a conquest of one of the most extensive empires of the world by a small and previously unknown people, or as the propagation of a new religion, or as both these events combined, the success of the movement is without a parallel in history. It far surpassed the careers of the great Eastern conquerors in the importance of its effects, and the growth of the Roman empire in brilliancy and rapidity. From Alexander to Napoleon conquests have generally been the result of the genius of some gifted individual, and have left, after a short period, but slight traces of their transient splendour. Even Rome's conquest of the world was a slow and painful effort compared with that of the Arabians; and, though she imposed her laws on the conquered nations, and enforced them by her military organisation, she neither attempted nor had the power to teach them a new faith; nor could she bind the various nations together into one great people, aiding her with heart and hand in the great mission she had undertaken.

It is true that a poor and simple, but warlike and independent, people like the Arabs could not long exist close to the ruins of so wealthy and so overgrown an empire as that of Constantinople without making an attempt to appropriate the spoil which the effeminate hands of its possessors were evidently unable to defend. It was equally impossible that so great a perversion of Christianity as then prevailed in Egypt and Syria could exist in a country which from the earliest ages had been the seat of the most earnest Monotheism, without provoking some attempt to return to the simpler faith which had never been wholly superseded. So that on the whole the extraordinary success of Mahometanism at its first outset must be attributed to the utter corruption, religious and political, of the expiring empire of the

East, as much as to any inherent greatness in the system itself, or the ability of the leaders who achieved the great work.

Had it been a mere conquest it must have crumbled to pieces as soon as completed; for Arabia was too thinly populated to send forth armies to fight continual battles and maintain so widely extended an empire. Its permanence was owing to the fact that the converted nations joined the cause with almost the enthusiasm of its original promoters; Persia, Syria, and Africa in turn sent forth their swarms to swell the tide of conquest, and to spread the religion of Islam to the remotest corners of the globe.

To understand either Mahometan history or art it is most essential to bear this constantly in mind, and not to assume that, because the first impulse was given from Arabia, everything afterwards must be traced back to that primitive people; on the contrary, there was no great depopulation, if any, of the conquered countries, no great transplantation of races. Each country retained its old inhabitants, who under a new form followed their old habits and clung to their old feelings with all the unchangeableness of the East, and perhaps with even less outward change than is usually supposed. Before the time of Mahomet the Sabæan worship of the stars was common to Arabia as well as to Persia and a great part of the Babylonian empire. The Jewish religion was diffused through Syria and parts of Arabia. Egypt, long before the time of Mahomet, must have been to a great extent Arabian, as it now wholly is. In all these countries the religion of Mahomet struck a chord that still vibrated among the people, and must have appeared more as a revival of the past than as the preaching of a new faith. In Spain alone colonization to some extent seems to have taken place, and the faith to have been new and strange; and there too alone we find the inevitable corollary of its early extinction.

So weak indeed in the converted countries was the mere Arabian influence, that each province soon shook off its yoke, and, under their own caliphs, Persia, Syria, Egypt, Africa, and Spain soon became independent states, yielding only a nominal fealty to that caliph who claimed to be the rightful successor of the Prophet, and, except in faith and the form of religion, the real and essential change was slight, and far more in externals than in the innate realities of life.

All this is more evident from the architecture than it is from any other source, without at least more study than most people would feel inclined to devote to the subject. The Arabs themselves had no architecture, properly so called. Their only temple was the Kaabah at Mecca, a small square tower, almost without any architectural ornaments, and far more famous for its antiquity and sanctity than for any artistic merit.

It is said that Mahomet built a mosque at Medina—a simple edifice of bricks and palm-sticks.[1] But the Koran gives no directions on the subject, and so simple were the primitive habits of the nomade Arabs that it is probable that if the religion had been confined to its native

[1] Abulfeda, ed. Reiske, vol. i. p. 32.

land, no mosque worthy of the name would ever have been erected. With them prayer everywhere and anywhere was equally acceptable. All that was required was for the faithful to turn towards Mecca at stated times and pray, going through certain forms and in certain attitudes, but whether the place was the desert or the housetop was quite immaterial.

Persia too seems in the earlier ages of Mahometanism to have retained her primitive horror for a stone-and-mortar worship, and to have refrained from building mosques, as she had refrained in still earlier ages from erecting temples properly so called; at least no trace of any ancient mosque has yet been discovered in that land, nor even a very distinct tradition of their former existence or character. If they did exist, they no doubt took their forms principally from the buildings with which the Sassanian kings had adorned the country.

In Syria the earlier buildings were direct copies of the Byzantine churches that had previously existed there; and in Egypt the Roman remains furnished both the ideas and the materials for their earliest edifices. Unfortunately the architecture of these lands, from the time of Constantine to that of Heraclius, is only very imperfectly known to us, and there is some difficulty in tracing the Moorish forms back to their source.

In Spain the Roman remains exercised an even more distinct influence on the style than elsewhere, and, knowing more of Mahometan architecture in that country, we can more easily point out the mode in which this influence acted.

This adoption of the forms belonging to the conquered countries is even more striking when we turn to India, where in the 12th century we find the Moslems employing Hindu architects to erect and adorn their mosques in their own native styles. Even two centuries later, when the Mahometans conquered Constantinople and began to adorn it with edifices consecrated to their own faith, they did not follow the models they were familiar with in those lands where they had long been settled, but copied, with more or less fidelity, the Christian edifices of the captured city.

It is true that, after centuries of practice, most of these heterogeneous elements became fused into a complete style. This style possesses so much that is entirely its own as to make it often difficult to detect the germs, taken from older styles of architecture, which gave rise to many of its most striking peculiarities. These, however, are never entirely obliterated. Everywhere the conviction is forced upon us that originally the Moslems had no style of their own, but adopted those which they found practised in the countries to which they came. In other words, the conquered or associated people still continued to build as they had built before their conversion, merely adapting their former methods to the purposes of their new religion. After a time this Mahometan element thus introduced into the styles of different countries produced a certain amount of uniformity. This was increased no doubt by the intercommunications which arose from the community of religion. In this way at last a style was elaborated,

tolerably homogeneous, though never losing entirely those local peculiarities which it received from the earlier styles out of which it rose, and which still continue to mark most distinctly the various nationalities which made up the great empire of Islam.

So essential is the observance of these distinctions of races and styles to enable us to understand the architecture generally and appropriately known under the title of Saracenic, that it is impossible to follow its history consecutively as a whole; and it will be necessary to divide it into chapters, each comprising a separate branch of the style, and thus going several times over the same periods of time, but of course avoiding as far as may be possible anything like repetition.

The following appears to be the division that will enable this to be done with the greatest distinctness :—

1st. The Syrian—the earliest and most like the Byzantine of all the Mahometan styles, but of which few early specimens now remain.

2nd. The Egyptian, which may be called the typical style of the group, commencing at the same time and from the same originals as the Syrian; but, being practised without foreign admixture for 10 or 11 centuries, it acquired a completeness and at the same time an elegance greater than what is found in any of the others.

3rd. The Persian—a style whose origin it is difficult now to trace, but which at its culminating point rivalled that of Egypt in splendour, but never in elegance nor in true architectural propriety.

4th. The Indian styles naturally form the next chapter. Their origin and history being perfectly well known, no difficulty can arise in tracing them to their source, or marking their gradations, or in appreciating their beauties, which in some respects are nearly unrivalled.

5th. After completing this survey of the Eastern styles, we return to that of Spain—a style differing so much from the others as to constitute a subject very complete in itself.

6th. The last distinctive style is that of Constantinople, comprising merely those edifices which were erected by the Turks in imitation of Santa Sophia and the other Christian churches of that city.[1]

DOMES AND POINTED ARCHES.

It will be necessary, before describing the different branches of Saracenic architecture, to say a few words on the introduction of some of its principal distinctive features. In speaking of Roman architecture allusion was more than once made to the change brought about by the

[1] As will be observed, the style enumerated under the first two heads rose directly out of the Byzantine art; and in strictness the chapter ought consequently to follow what is said on that style. A perfectly consecutive arrangement of so complex a subject is, I fear, impossible; and so much inconvenience would occur from breaking the thread of the Christian narrative, to introduce a description of a style, only two of whose various forms rose out of that Christian art, that I believe the order adopted will be found more convenient. Besides, we know so very little of the arts of the Christian East, between the ages of Constantine and Heraclius, that no direct light can, at present at least, be thrown on the subject from that source. If, however, any part of what follows seems obscure from the want of the previous knowledge, I must beg the reader to peruse first the chapter on Byzantine art, and then return to this.

introduction of arches by that people, not only into the construction, but into the decorative parts of buildings. Even this was less important than the introduction of continuous arches, or in other words of vaults and domes, as a roofing to interiors, which gave an entirely new character to the whole art, necessitating a new and complicated arrangement of thrusts and equipoises, with abutments and buttresses of various sorts, to maintain an equilibrium in the various parts of the edifice. This necessity was wholly unknown in earlier styles—a prop sufficient to support a weight acting perpendicularly upon it being all that was then required; and as pillars sufficed, and were the most convenient mode of effecting this, they were generally adopted for the purpose. The walls were merely subordinate screens, and a description of the orders, as they were called, or, in other words, of pillars with the bases and entablatures, constituted the whole science of decorative architecture. With the introduction, however, of stone roofs, constructed on this principle, the case became widely different. Pillars no longer sufficed, and walls of greater or less thickness, or piers which were massive fragments of walls, were introduced, and the whole style of decoration and construction altered to suit this new exigency—that of constructing a building whose roof should be composed of the same materials as its walls.

The Roman roofs were of two kinds: the one domical, or circular both in plan and section; the other either a plain tunnel-vault, or a continuous vault of the same sort, intersected by smaller or similar vaults cutting into the principal one at right angles. The Pantheon at Rome[1] is the typical example of the first, the Basilica of Maxentius[2] of the last class of vaults. The latter generally were considered as the most convenient, inasmuch as the rooms they covered were rectangular in plan, which is always an advantage for an interior, and they might be in any proportion of width to length that might be desired. The former at first were confined to circular apartments; by degrees, however, men learnt, by the use of pendentives (as will be explained in the chapter on Byzantine art), and by other expedients, to place domes first on square, and then on rectangular apartments, and by this means they formed roofs which surpass in beauty any of those constructed on the rectangular principle.

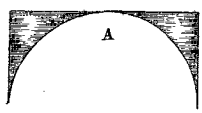
In the division of the Roman empire and Roman art the dome fell to the share of the eastern half, the rectangular vaults to the western half of the empire: both worked them out in their own peculiar fashion till they wholly lost all trace of their Roman origin, but neither ever practically interfered with the heritage of the other—the dome in Western Europe being rare and exceptional, and never an essential part of the style, while the rectangular vault is as rare in the East, and quite as little an integral part of their mode of decoration. So far as we can now form an opinion, the eastern nation had by far the noblest share, and took the element of Roman art which was most capable of being elaborated into forms of beauty. They never, how-

[1] Woodcut, p. 311 *et seq.*

[2] P. 320 *et seq.*

ever, had either the power or the energy of the western people, and the result perhaps is that the inferior element is worked into more forms of beauty than the nobler one, but this is certainly not always the case, though it is so often enough to make us regret the strange neglect of this wonderful invention of the dome by our Gothic forefathers.

Before much progress had been made in the practice of this new art of roofing, both nations found themselves forced to abandon the semicircular arch, and to adopt either the pointed one or some stilted or analogous form. In the West it was the exigencies of vaulting that induced the architects to adopt so universally as they did the broken arch instead of the continuous one. This is now generally admitted; but it is not so well understood why in the East it should also have come into such general use. A little reflection, however, will show how difficult it is to adopt the curves of a pendentive to a circular arch, and how weak the arrangement is when it is done, the upper curves at A in the annexed diagram (Fig. 1) being actually evanescent points



310. FIG. 1.

FIG. 2.

FIG. 3.

of no thickness in some parts, if properly carried out. With a pointed arch, however (Fig. 2), even when the pendentives follow its lines, there is some thickness in every part, and no curve need slope forward at a greater angle than 45 degrees. The eastern pointed arch is always, from this cause I believe, straight-lined at the summit. But if, as in the third example, the architects were content to reduce the square on the ground, first to an octagon at the springing of the roof, and then, by cutting off the angles, to a polygon of 16 sides, on which a circle easily rests, with the assistance of the pointed arch, the whole becomes so constructively correct that no difficulty is experienced, even in domes of very great span, while the same arrangement with circular arches would have been both weak and awkward.

Still it is scarcely probable that the Saracenic architects would have used this form so early and so generally as they did, if it was not a usual and customary shape of arch in the East at the time when they first began to build. There is every reason to suppose that this was the case; and that from the time of the building of the sepulchral chambers at Mycenæ to the Christian era there is no difficulty in tracing it in Greece, in Etruria, and in Asia Minor, wherever a Pelasgic or Oriental people are found. In the older examples it is always constructed horizontally, in which form it is familiar and frequent (as at Assos, woodcut No. 198) as an ornamental style of opening.

It is found in the pyramids of Meroë (as before mentioned, page 250),

as old as 8 centuries before Christ, and Sir Gardner Wilkinson[1] has pointed out its frequent use in the Christian churches of the Thebaid before the era of the Hejra. It is true that, wherever the influence of Rome was thoroughly established, we find during the period of their domination nothing but circular arches; but it is not a little curious to find the pointed shape in the earliest Christian church of which we have any knowledge—the one built in the age of Constantine over the tomb of our Saviour at Jerusalem. There the older Oriental form reappears, so timidly, it is true, as almost to escape observation, but still showing how readily an Eastern people return to ancient habits and feelings as soon as the oppressing hand is removed. Other examples of this age exist, I believe, at Diarbekr, and at other places in that country; but they have neither been looked for, nor, when seen, examined with the care they deserve. Pointed arches reappear in the aqueducts of Justinian at Constantinople, and evidently were becoming or had become a current feature of architectural decoration at the time of the great Moslem irruption. If no other proof of this existed, the fact that the Saracenic architects used them almost exclusively from the first ought to be sufficient to establish the fact. They are found in the oldest part of the mosque which Amrou built at Fostat, or Old Cairo, in the middle of the 7th century. No others are used constructively in the great mosque el Aksah built at Jerusalem at the end of that century; and in the mosque of Ebn Touloun at Cairo, erected in the 9th century, the pointed arch is an essential and perfectly established element of art, wholly superseding the round arch, or anything approaching to it. It is true we still want examples to connect these two points in its history. A little research will no doubt supply this, but for our present purpose it is sufficient to know that this form of arch was used by the first Saracenic architects a few years after the commencement of the Moslem domination, and that during the 9th century of our era it had become as essential a part of that art as it was of Christian art in France in the 13th century.

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[1] In a paper read at the Royal Institution of British Architects, July 16, 1849. Sir Gardner was then abroad, and was not, I believe, aware that I had read a paper on the same subject, attempting to prove the same facts, on the 18th of the previous month.

CHAPTER II.

SYRIA AND EGYPT.

CONTENTS.

Mosques at Jerusalem — El Aksah — Mosque at Damascus — Egypt — Mosques at Cairo — Other African buildings — Mecca.

CHRONOLOGICAL MEMORANDA.

	DATES.		DATES.
The Hejra	A.D. 622	Ebn Touloun at Cairo	A.D. 876
Caliph Omar builds mosque at Jerusalem	637	El Azhar	981
Amrou—mosque at Old Cairo	642	Sultan Barkook	1149
Abd el Malek builds El Aksah, at Jerusalem	691	Kaloun	1284
Caliph Walid builds mosque at Damascus	705	Sultan Hassan	1356

As before mentioned, the earliest mosque of whose existence we have any record was that built by Mahomet himself at Medina. As, however, it contained apartments for his wives, and other rooms for domestic purposes, it might perhaps be more properly denominated a dwelling-house than a mosque. Indeed sacred buildings, as we understand them, seem to have formed no part of the scheme of the Mahometan religion. The one temple of this faith was the Kaabah at Mecca, towards which all believers were instructed to turn when they prayed.

When, however, the Mahometans came among the temple-building nations, they seem early to have felt the necessity of some material object—some visible monument of their religion; and we find that Omar, when he obtained possession of Jerusalem, in the 15th year of the Hejra, felt the necessity of building a place of prayer towards which the faithful might turn, or rather which should point out to them the direction of Mecca.[1] Consequently we read that, while he respected the Christian sacred buildings with the most scrupulous fidelity to the terms of the treaty, he erected a small place of worship within the precincts of the Jewish temple, on that spot where Julian the Apostate had previously attempted to re-edify that building, and which was then neglected and held accursed by the Christians.

That mosque now exists among the adjuncts of the Aksah, though whether it be the building now known as the mosque of the Mogrebins,

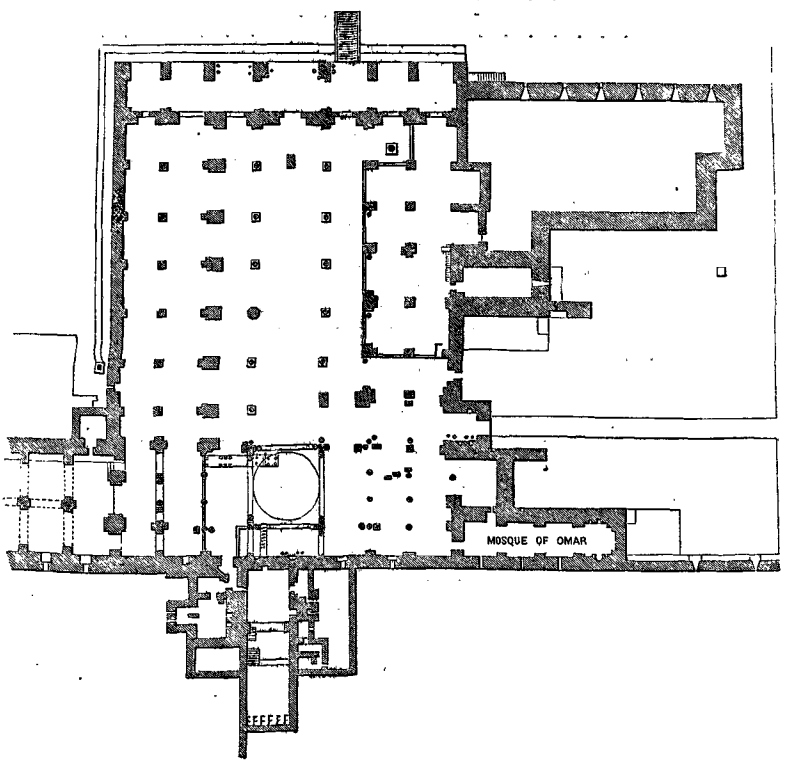
[1] For the particulars of the building of the mosque, I must refer the reader to my work on the Ancient Topography of Jerusalem, where he will find them stated at length.

or the small cell which still bears Omar's name (see woodcut No. 311), to the eastward of the mosque, may be disputed: my own impression is that the latter is most probably the spot.

As might be expected from the simplicity of the Caliph's character, his poverty, and his hatred of everything like ostentation, this mosque is a very simple building, being merely a plain vaulted cell, about 18 ft. wide by nearly 80 in length; it may, however, have extended a little farther westward originally, and a portion of it may have been cut off when the neighbouring Aksah was built, and included within its walls.[1]

The only other mosque of this age of which we have any knowledge is that erected by Amrou at Old Cairo in Egypt, in the 21st year of the Hejra.

The troubles that succeeded the murder of Ali and his sons seem to have been singularly unfavourable to building or any of the arts of peace during the next half-century, and no record has yet been brought to light of any important building erected during that period. In the 69th year of the Hejra, Abd el Malek, the Caliph of Damascus,

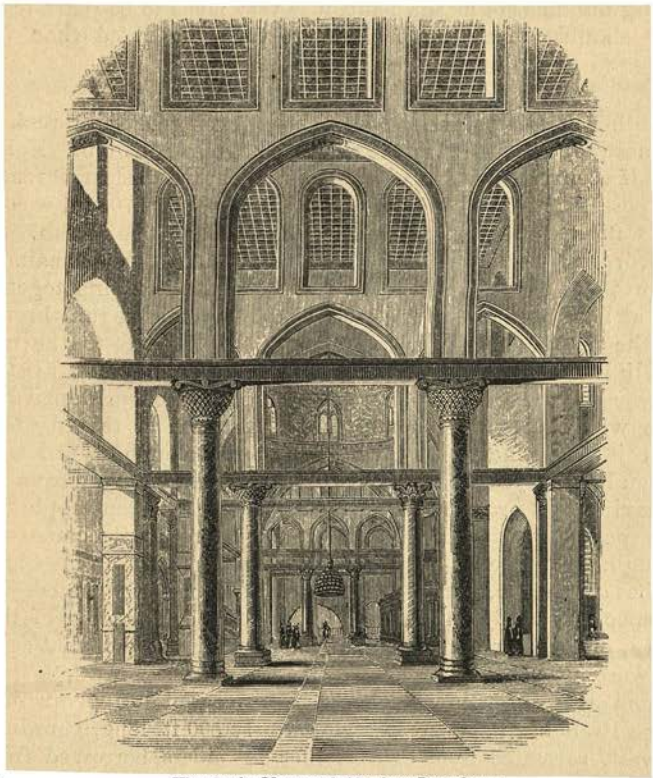


311. Plan of the Mosque el Aksah at Jerusalem. Scale 100 ft. to 1 in.

[1] The mosque of the Mogrebins is a plain vaulted apartment, 25 feet by 173.

determined to erect a mosque at Jerusalem. His objects were to set up that city as a place of pilgrimage in opposition to Mecca, which was then in the possession of a rival, and to carry into effect what was at one time understood to have been the intention of Mahomet—of choosing the temple of Jerusalem instead of that of Mecca as the holy place of his new religion. These ulterior purposes were never carried out, in consequence of the violent opposition which the project met with from the Jews.

The mosque which Abd el Malek erected still remains tolerably unaltered to the present time, and fortunately the enterprise and industry of three Englishmen[1] have enabled us to speak correctly as to its plans and details. The plan (woodcut No. 311) will show that it is in fact a Christian basilica of 7 aisles, and of considerable dimensions, being 184 ft. wide by 272 in length over all, thus covering about 50,000 square ft., or as much as many of our cathedrals. It has a porch which seems to have been a later addition, and has not the usual square court in front, which was an almost invariable accompaniment of



312. View in the Mosque el Aksah at Jerusalem.

[1] I refer, of course, to Messrs. Catherwood, Arundale, and Bonomi. Had the English public shown the least degree of interest in these researches, they would have been published long ago; but this not being the case, I must again refer to slight reductions of them contained in my work on Jerusalem.

Christian basilicas of that date, and still more so of mosques; indeed, these latter took their form from the gradual reduction of the depth of the church part of the arrangement, and the increase of the court, which eventually became the mosque itself.

"The interior is supported," says an Arab historian,[1] "by 45 columns, 33 of which are of marble, and 12 of common stone." These are all evidently taken from more ancient buildings. "Besides this there are 40 piers of common stone." Arculphus, a Christian monk, who saw it about a century after its erection, describes it as a square building, capable of containing about 3000 persons, and mentions the curious peculiarity of the pillars being connected by beams, showing that the construction was then the same as we see now, as is shown in the woodcut (No. 312), which is a view taken across the southern end of the building. The pier arches are pointed throughout, but above this is a range of openings with circular heads.

Taken altogether, it certainly is historically one of the most interesting buildings of its age; and it is very much to be regretted that apathy should prevent its being more fully illustrated than it has been.

Mosque at Damascus.

Another building of the same age, but of even greater interest, is the great mosque at Damascus, at one time the Church of St. John. For more than half a century after the capture of the city by the Moslems it remained in the possession of the Christians. At that time (A.D. 705) it was ceded to the Caliph Walid, the successor of the builder of the Aksah.

According to Jelal u deen,[2] the church of St. John remained the joint property of the Christians and Moslems, both praying together in it, or, at least, on the east and west sides of a partition run through it, from the fall of the city in the year of the Hejra 14 to the time of the Caliph Walid in the year 86. He either offered the Christians 4 desecrated churches in exchange for it, or threatened to deprive them of one which they held on sufferance. As soon as this matter was settled, it is said, he pulled down the Christian church, or at least part of it, and in 10 years completed the present splendid mosque on its site, having first procured from the emperor at Constantinople fit and proper persons to act as architects and masons in its construction. Although, therefore, it may differ in arrangement from Christian churches of that age, it may, as far as detail is concerned, be considered as a specimen of Byzantine architecture of the beginning of the 8th century, or, in other words, of the Eastern architecture of that age—for there were not yet two styles when it was erected.

From a MS. plan brought home by Mr. Porter it appears that the mosque itself has three great aisles nearly 500 ft. long, running east and west, separated from one another by pillars borrowed from the earlier Christian or Pagan temple which stood on this spot. Their continuity is broken in the centre by a transept raised higher than the rest, and supporting a small dome in its centre.

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[1] Mejr ed Deen. Fundgruben des Orients, vol. ii. p. 83.

[2] History of Jerusalem, translated by the Rev. M. Reynolds, p. 409 *et seq.*

The south wall has the usual niches (Mirhab) to indicate the direction of Mecca, and above these a range of circular-headed windows, running the whole length of the mosque. To the north the mosque opens by a series of arches supported on pillars into a court-yard about 500 ft. long, by half that in width, surrounded by a colonnade on three sides—the whole apparently consisting of Christian materials, but entirely re-arranged by the Mahometans.

With these two mosques our list of Syrian edifices closes—not that others do not exist, but simply because no one has yet either examined or described them. From the time of the Caliph Walid to the epoch of the Crusades, Syria was a great and wealthy country, and all its more important cities must have been provided with places of prayer, many of which still, no doubt, remain; and since the time of the Crusades many more must have been erected, but these, too, are equally unknown to us; so that, for the present at least, the information does not exist from which this chapter in the history of architecture can be written.

EGYPT.

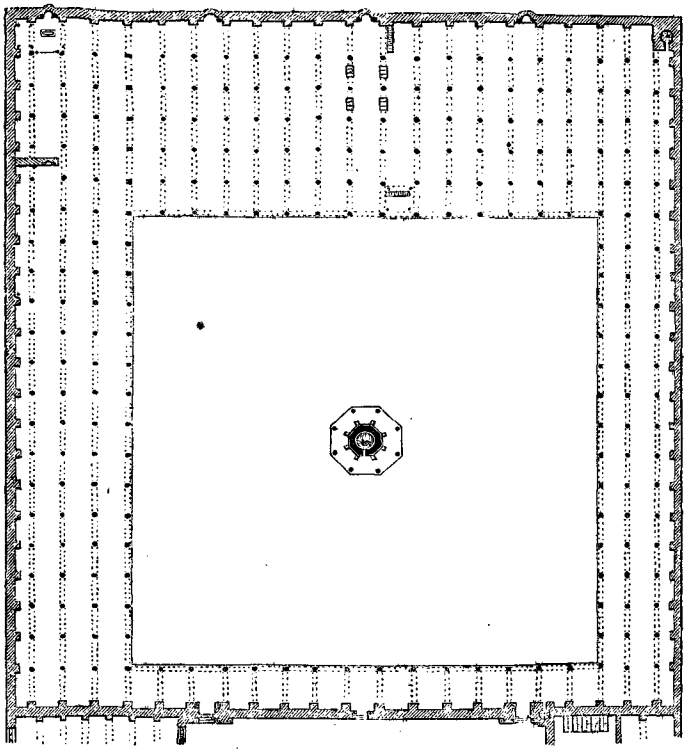
In Egypt our history begins with the mosque which Amrou in the 21st year of the Hejra (642 A.D.) erected at Old Cairo; its original dimensions were only 50 cubits (75 ft.) long, by 30 cubits, or 45 ft. wide. Edircy[1] says that it was originally a Christian church which the Moslems converted into a mosque, and its dimensions and form certainly would lead us to suppose that, if not so, it was at least built after the pattern of the Christian churches of that age. As early however as the 53rd year of the Hejra it was enlarged, and again in the 79th; and it apparently was almost wholly rebuilt by the two great builders of that age, Abd el Malek and Walid, the builders of the mosques of Jerusalem and Damascus.

It probably now remains in all essential parts as left by these two Caliphs, though frequently repaired, and probably in some parts altered by subsequent sovereigns of Egypt. In its present state it may be considered as a fair specimen of the form mosques took when they had quite emancipated themselves from the Christian models, or rather when the court before the narthex of the Christian church had absorbed the basilica, so as to become itself the principal part of the building, the church part being spread out into a mere deep colonnade, and its three apsidal altars modified into niches pointing towards the sacred Mecca.

As will be seen from the plan, it is nearly square, 390 ft. by 357 ft., consisting of a court-yard, 255 ft. square, surrounded on all sides by porticoes, supported by 245 columns taken from older edifices of the Romans and Byzantines. These are joined together by brick arches of circular form,[2] tied at their springing by wooden beams, as in the

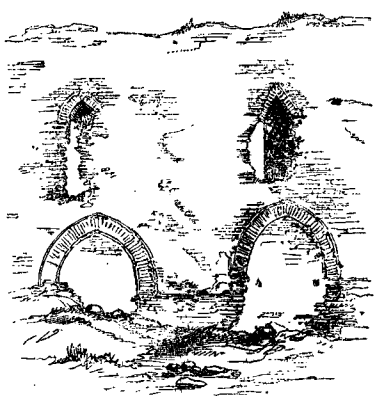
[1] Translated by M. Jaubert, tom. i. p. 303. The particulars of this description are taken from M. Girault de Prangey, Monumens Arabes, compared with M. Coste's Edifices de Caire.

[2] M. Coste makes all these arches pointed. M. de Prangey states that they are all circular; the truth being that they are partly one, partly the other.



313. Mosque of Amrou, Old Cairo. From Coste's Architecture Arabe. Scale 100 ft. to 1 in.

Aksah, and covered by a wooden roof. All this part of the mosque, however, has been so often repaired and renovated, that little probably of the original decoration remains.



314. Arches in the Mosque of Amrou. From G. de Prangey's work.

Of the original mosque, or perhaps church, the only part that can with certainty be said to remain is a portion of the outer wall, represented in woodcut No. 314, which possesses the peculiarity of being built with pointed arches, similar in form to those of el Aksah at Jerusalem. They are now built up, and must have been so at the time of one of the earlier alterations; still they are from their undoubted antiquity a curious contribution to the much-contested history of the pointed arch. The whole mosque is now in a sad state of degradation and decay, notwithstanding the beautiful climate of Egypt, arising principally from its original faulty construc-

tion. Owing to the paucity of details, many of M. Coste's restorations must be taken as extremely doubtful.

From the time of the great rebuilding of the mosque of Amrou under Walid, there is a gap in the architectural history of Egypt of nearly a century and a half, during which time it is probable that no really great work was undertaken in it, as Egypt was then a dependent province of the great Mahometan empire. With the recovery, however, of something like independence, we find one of its most powerful rulers, Ebn Touloun, erecting a mosque at Cairo, which, owing to its superior style of construction, still remains in tolerable perfection to the present day.

As usual, tradition ascribes the design to a Christian architect, who, when the Emir declined to use the columns of desecrated churches for the purposed mosque, offered to build it entirely of original materials. He was first thrown into prison from the machinations of his rivals, and ill-treated; but at last, when they found they could not dispense with his services, he was again sent for, and his design carried out.[1]

Be this as it may, the whole style of the mosque shows an immense advance on that of its predecessor, all trace of Roman or Byzantine art having disappeared in the interval, and the Saracenic architecture appearing here complete in all its details, every part originally borrowed from previous styles having been worked up and fused into a consentaneous whole. Whether this took place in Egypt itself during the century and a half that had elapsed is by no means clear; but it is more than probable that the brilliant Courts of Damascus and Bagdad did more than Egypt towards bringing about this result. At all events, from this time we find no backsliding; the style in Egypt at last takes its rank as a separate and complete architectural form. It is true, nevertheless, that in so rich a storehouse of materials as Egypt, the architects could not always resist appropriating the remains of earlier buildings; but when they did this, they used them so completely in their own fashion, and so worked them into their own style, that we do not at once recognise the sources from which they are derived.

To return however to the mosque of Touloun. Its general arrangement is almost identical with that of the mosque of Amrou, only with somewhat increased dimensions, the court being very nearly 300 ft. square, and the whole building 390 ft. by 455 ft. No pillars whatever are used in its construction, except as engaged corner shafts; all the arches, which are invariably pointed, being supported by massive piers. Two ranges of these arcades surround 3 sides of the court, while on that towards Mecca there are 5; but with this peculiarity, that, instead of the arcades running parallel to the side, as in a Christian church, or in the mosque of Amrou, they run across the mosque from east to west, as they always did in subsequent examples.

The whole building is of brick, covered with stucco; and fortu-

[1] See Coste's Edifices de Caire, p. 32, quoting from Mackrisi.

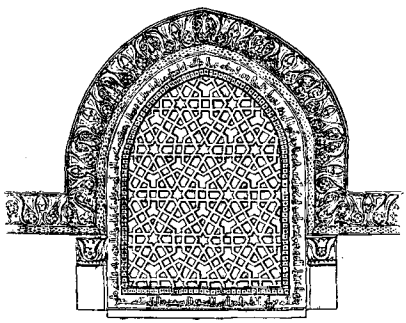
nately almost every opening is surmounted by an inscription in the old form of Cufic characters, which were then used, and only used about the period to which the mosque is ascribed, so that there can be no doubt as to its date. Indeed, the age both of the building itself, and of all its details, is well ascertained.

315. Mosque of Ebn Touloun at Cairo. From Coste's Architecture Arabe.

The woodcut No. 315 will explain the form of its arcades, and of the ornaments that cover them. Their general character is that of rude and massive simplicity, being the counterpart of our own Norman style in England. A certain element of sublimity and power, in spite of occasional clumsiness, is common to both these styles. Indeed,

excepting perhaps the Hassanee mosque, there is perhaps no mosque in Cairo so imposing and so perfect as this, though it possesses little or nothing of that grace and elegance which we are accustomed to expect in this style.

Among the more remarkable peculiarities of this building is the mode in which all the external openings are filled with that peculiar sort of tracery which became as characteristic of this style as Gothic tracery was of the windows of our churches five centuries afterwards. With the Saracens the whole window is filled with it, and the interstices are small and varied; both which characteristics are appropriate when the window is not to be looked out of, or when it is filled with painted glass; but of course they are utterly unsuitable to our purposes. Yet it is doubtful, even now, whether the Saracenic did not excel the Gothic architects, even in their best days, in the elegance of design and variety of invention displayed in the tracery of their windows. In the mosque of Ebn Touloun it is used as if an old and perfected invention, and with the germs of all those angular and flowing lines which afterwards were combined into such myriad forms of beauty.



316. Window in Mosque of Ebn Touloun.

It is possible that some future researches may bring to light a building 50, or even 100 years earlier than this, which may show nearly as complete an emancipation from Christian art as this; but for the present, it is with the mosque of Touloun that we must date the complete foundation of the new style. Although there is considerable difficulty in tracing the history of the style from the erection of the mosques of Damascus and Jerusalem to that of Touloun, there is none from that time onwards. Cairo alone furnishes nearly sufficient materials for the purpose.

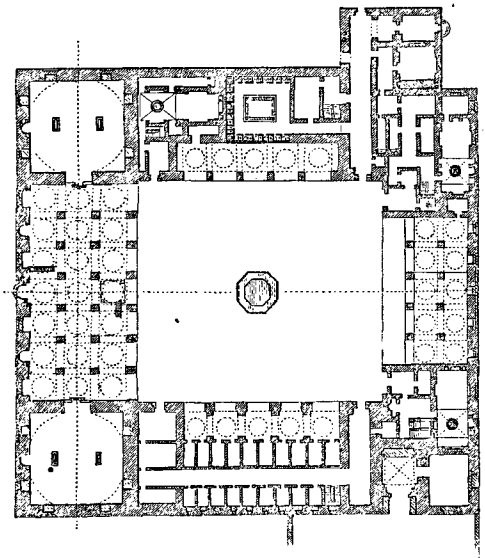
The next great mosque erected in this city was El Azhar, or "the splendid," commenced in the year 981, or about a century after that of Touloun, and, though certainly a very magnificent building showing a great advance in elegance of detail over the last named, is far from being so satisfactory, owing to the introduction of ancient pillars in parts, and to masses of walls being placed on them, only suited to such forms as those used in the mosque of Touloun.

The buildings during the next century and a half are neither numerous nor remarkable for their size, though progress is very evident in such examples as exist; and in the middle of the 12th century we find the style almost entirely changed.

One of the finest buildings of the last age is that which Sultan Barkook built without the walls of Cairo (A.D. 1149), which, besides a mosque, contains an additional feature in the great sepulchral cham-

bers, which are in fact the principal part of the edifice, betraying the existence of a strong affinity to the tomb-building races in the rulers of Egypt at that time.

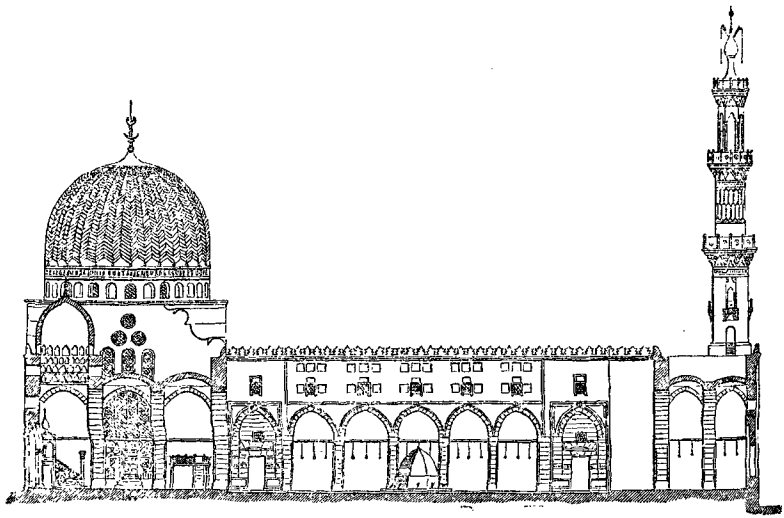
The plan and section (woodcuts Nos. 317 and 318), though small, will show the state to which the art had at that period arrived in Egypt. The pointed arch, as will be observed, is used with as much lightness and elegance as ever it reached in the West.



317. Plan of Mosque and Tombs of Sultan Barkook. From Coste. Scale 100 ft. to 1 in.

The dome has become a most graceful and elaborate appendage, forming not only a very perfect ceiling inside, but a most imposing ornament to the exterior. Above all, the minaret has here arrived at as high a degree of perfection as it ever reached in any after age.

The oldest known example of this species of tower is that of the mosque of Ebn Touloun, but it is particularly ungraceful and clumsy. The minaret in that of Amrou was probably an addition of a later age. Those

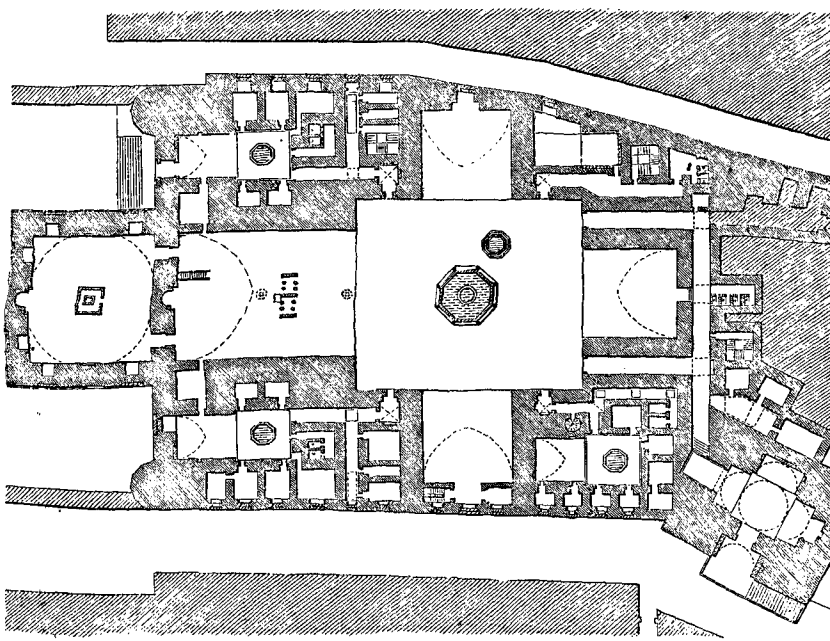


318. Section of Mosque of Barkook. From Coste's Architecture Arabe.

of the Azhar, which are probably of the date of that mosque, almost equal the one represented in the woodcut; but it is only here that they seem to have acquired that elegance and completeness which render them perhaps the most beautiful form of tower architecture in the world. Our prejudices are of course with the spires of our Gothic churches, and the Indians erected some noble towers; but taken altogether, it is doubtful if anything of its class ever surpassed the beauty and elegance of the minarets attached to the mosques during this and the two or three subsequent centuries.

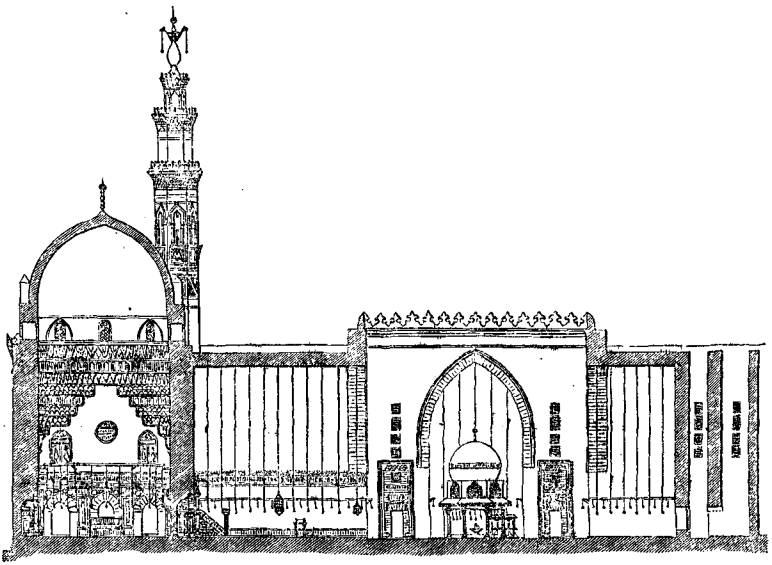
The mosque of Kaloun, and the hospital attached to it (A.D. 1284), are both noble buildings, full of the most elegant details, and not without considerable grandeur in parts. In all except detail, however, they must yield the palm to the next great example, the mosque with which the Sultan Hassan adorned Cairo in the year 1356. In some respects it is one of the most remarkable mosques ever erected in any country, and differs considerably from any other with which we are at present acquainted.

As will be seen from the plan (woodcut No. 319), its external form is very irregular, following on all sides the lines of the streets within which it is situated. This irregularity, however, is not such as to detract from its appearance, which is singularly bold and massive on every side; the walls being nearly 100 ft. in height, and surmounted by a cornice, which adds 13 ft. to this, and projects about 6 ft. This great height is divided into no less than 9 stories of small apartments;



319. Mosque of Sultan Hassan. From Coste's Architecture Arabe. Scale 100 ft. to 1 in.

but the openings are so deeply recessed, and the projections between them so bold, that, instead of cutting it up and making it look like a factory, which would have been the case in England, the building has all the apparent solidity of a fortress, and seems more worthy of the descendants of the ancient Pharaohs than any work of modern times in Egypt.



320. Section of Mosque of Hassan, Cairo. Scale 100 ft. to 1 in.

Internally there is a court open to the sky, measuring 117 ft. by 105, enclosed by a wall 112 ft. in height. Instead of the usual colonnades or arcades, only one gigantic niche opens in each face. On three sides these niches measure 46 ft. square; but on that which faces towards Mecca, the great niche is 69 ft. wide by 90 in depth, and 90 ft. high internally. All 4 niches are covered with simple tunnel vaults of a pointed form, without either ribs or intersections, and for simple grandeur are unrivalled by any similar arches known to exist anywhere.

Behind the niche pointing towards Mecca is the tomb of the founder, square in plan, as these buildings almost always are, measuring 69 ft. each way, and covered by a lofty and elegant dome resting on pendentives of great beauty and richness. It is flanked on each side by two noble minarets, one of which is the highest and largest in Cairo, and probably in any part of the world, being 280 ft. in height, and of proportionate breadth. Its design and outline however are scarcely so elegant as some others, though even in these respects it must be considered a very beautiful example of its class.

One of the principal defects of the building is the position of its doorway, which, instead of facing the *kibla* or niche pointing towards

Mecca, is placed diagonally, in the street alongside of the building. It is a very beautiful specimen of architecture in itself; still its situation and the narow passages that lead from it to the main building detract most materially from the effect of the whole edifice, which in other respects is so perfect. It may have been, that ground could not be obtained for the purpose of placing the entrance in the right position; but more probably it was so arranged as a means of defence, the whole structure having very much the appearance of a fortalice, and being without doubt erected to serve that purpose, as well as being adapted for a house of prayer.

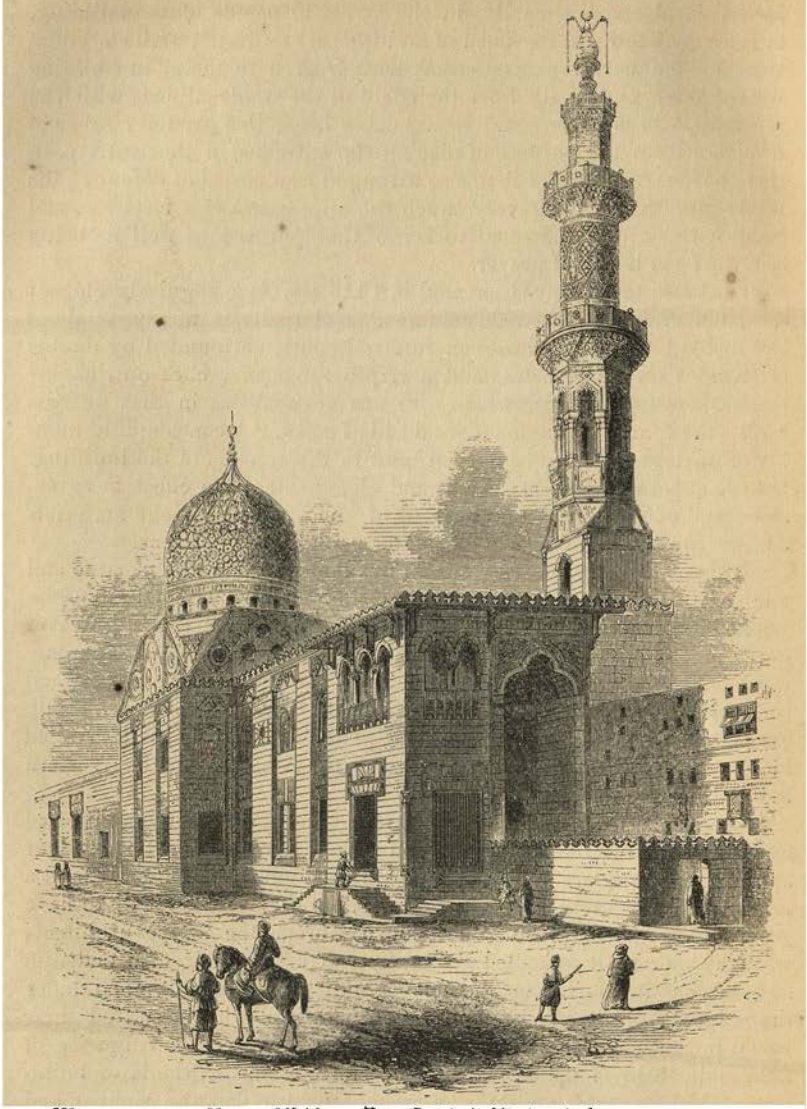
The mosque El Moyed, erected in 1415 A.D., is a singularly elegant specimen of a mosque with columns. Externally it measures about 300 ft. by 250, and possesses an internal court, surrounded by double colonnades on three sides, and a triple range of arches on the side looking towards Mecca, where also are situated—as in that of Barkook—the tombs of the founder and his family. A considerable number of ancient columns have been used in the erection of the building, but the superstructure is so light and elegant, that the effect is agreeable; and of the mixed mosques—or of those where ancient materials are incorporated—this is one of the most pleasing specimens.

Perhaps the most perfect gem in or about Cairo is the mosque and tomb of Kaitbey (woodcut No. 321), outside the walls, erected A.D. 1463. Looked at externally or internally, nothing can exceed the grace of every part of this building. Its small dimensions exclude it from any claim to grandeur, nor does it pretend to the purity of the Greek and some other styles; but as a perfect model of the elegance we generally associate with the architecture of this people, it is perhaps unrivalled by anything in Egypt, and far surpasses the Alhambra or the Western buildings of its age.

After this period there were not many important buildings erected in Cairo, or indeed in Egypt; and when a new age of splendour appears, the old art is found to have died out in the interval, and a renaissance far more injurious than that of the West is found to have grown up in the interval. In modern Europe the native architects wrought out their so-called restoration of art in their own pedantic fashion; but in the Levant the corresponding process took place under the auspices of a set of refugee Italian artists, who engrafted their would-be classical notions on the Moorish style with a vulgarity of form and colour of which we have no conception. In the later buildings of Mehemet Ali and his contemporaries we find the richest and most beautiful materials, used so as to make us wonder how men could so pervert every notion of beauty and propriety to the production of such discordant ugliness.

From its size and the beauty of the materials, the mosque erected by the late Pasha in the citadel of Cairo ought to rival any of the more ancient buildings in the city; but as it is, nothing can be worse or more uninteresting.

So little is known of the other buildings of Egypt and of the neighbouring countries, that for the present they must be passed over,



321. Mosque of Kaitbey. From Coste's Architecture Arabe.

though many of them are doubtless of great antiquity, and not without considerable pretensions to beauty and grandeur.

One of the most interesting of these is the mosque at Kairwan, which cannot well be passed over, as that city was long the capital of the African provinces of the empire of the caliphs; and it was thence that they conquered Sicily, and spread their religion into the centre of the great continent where it is located. The mosque was erected, or at least commenced, in the 1st century of the Hejra, and is built

principally from Roman remains found in the neighbourhood, but is now considered so sacred that no Christian is allowed to set foot within its precincts, so that all we have the means of knowing is that it is a worthy compeer of the contemporary mosques of Damascus and Cairo.

Tunis also possesses some noble edifices, not so old as this, but still of a good age; but, except the minaret represented in the annexed woodcut (No. 322), none of them have yet been drawn in such a manner as to enable us to judge either what they are, or what rank they are entitled to as works of art. This minaret is one of the finest specimens of a particular class. It possesses none of the grace or elaborate beauty of detail of those at Cairo; but the beautiful proportion of the shaft, and the appropriate half-warlike style of its ornaments, render it singularly pleasing. The upper part also is well proportioned, but has been altered to some extent in modern times. Unfortunately neither its age nor height is correctly known. It probably is 3 or 4 centuries old, and, with its contemporary the Hassanee mosque at Cairo, proves that the Saracenic architects were capable of expressing simple grandeur as well as elaborate beauty when it suited them to do so.

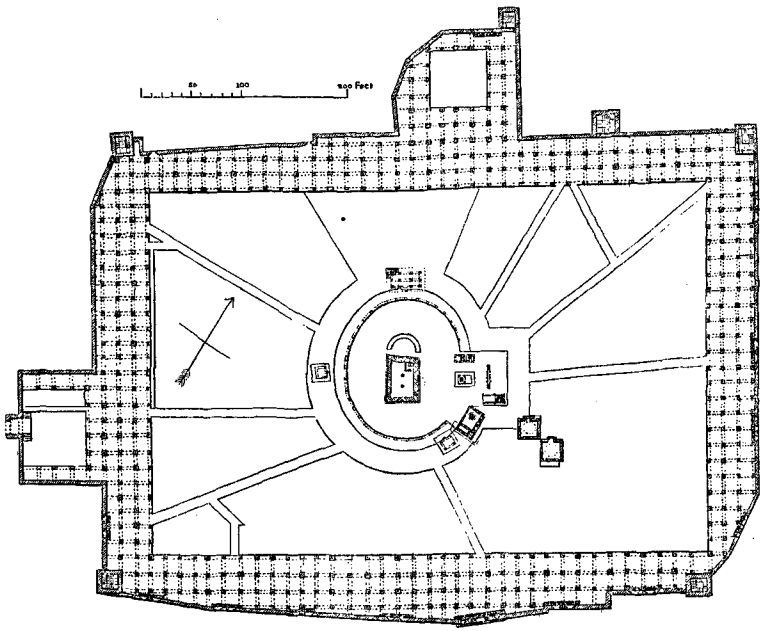
322. Minaret at Tunis. From Girault de Prangey.

Algeria possesses no buildings of any importance belonging to any good age of Moorish art. Those of Constantineh are the only ones which have yet been illustrated in such a manner as to be intelligible, and they scarcely deserve mention after the great buildings in Egypt and the countries farther east. I cannot help suspecting that some remains of a better age may still be brought to light; but the French archæologists seem to be wholly taken up with the vestiges of the Romans, and not to have turned their attention seriously to the more modern style, which it is to be hoped they soon will do. In an artistic point of view, at least, this is far more important than the few fragments of Roman buildings that still are left in that remote province.

MECCA.

As an appendix to this chapter, though scarcely strictly belonging to it, a plan is introduced of the celebrated temple at Mecca, more remarkable for its sanctity than for its architectural beauty. Such drawings as we possess hardly enable us to speak positively on this head, nor do they admit of our discriminating between the parts

erected at different ages; and unfortunately the very few Christians who have ever seen the interior were not possessed of the knowledge requisite to enlighten us on the subject.



323. Great Mosque at Mecca. From a plan by Ali Bey.[1]

The principal object here is of course the Kaabah, a small tower, nearly but not quite square in plan, the longer sides being 39 and 40 ft. respectively; the shorter 31 and 33 ft.; its height is 36 ft. The entrance is near one corner, at a height of 6 ft. from the ground. It is wholly without architectural ornament, and the upper part is covered by a black cloth, which is annually renewed. Next in importance to this is the Zemzem, or holy spring, which is said to have gushed out on this spot to the succour of Ishmael and his mother when perishing of thirst. These two objects are joined by a railing surrounding the Kaabah, except at one point, where it joins the Zemzem. The railing probably marks the enclosure of the old Pagan temple before Mahomet's time.

These, with some other subordinate buildings, now stand in a courtyard, forming a perfect rectangle internally of about 380 ft. by 570, surrounded by arcades on all sides. These vary considerably in depth, so as to accommodate themselves to the external outline of the building, which, as shown in the woodcut (No. 323), is very irregular. It is entered on all sides by 19 gateways, some of which are said to be of considerable magnificence, and it is adorned by 7 minarets. These are

[1] To get it within the page, the scale of the plan is reduced to 200 French or 214 English ft. to 1 in.

placed very irregularly, and none of them are of particular beauty or size.

On the longer sides of the court there are 36 arches, on the shorter 24, all slightly pointed. They are supported by columns of greyish marble, every fourth being a square pier, the others circular pillars.

Neither its ordinance, nor, so far as we can understand, its details, render the temple an object of much architectural magnificence. Even in size it is surpassed by many, and is less than its great rival, the temple of Jerusalem, which was 600 ft. square. Still it is interesting, as it is in reality the one temple of the Moslem world; for though many mosques are now reputed sacred and studiously guarded against profanation as such, this pretended sanctity is evidently a prejudice borrowed or inherited from other religions, and is no part of the doctrine of the Moslem faith, which, like the Jewish, points to one only temple as the place where the people should worship, and towards which they should turn in prayer.

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CHAPTER III.

PERSIA.[1]

CONTENTS.

Historical notice — Imaret at Erzeroum — Mosque at Tabreez — Tomb at Sultanieh — Bazaar at Ispahan — College of Husein Shah — Palaces and other buildings.

CHRONOLOGICAL MEMORANDA.

	DATES.		DATES.
Arab conquest of Persia	A.D. 641	Mahomed Khodabendah, builder of tomb at Sultanieh, began to reign . . .	A.D. 1303
Haroun el Rasheed began to reign . .	786	Sufi dynasty	1499
Dynasty of Tartar Samanides	874	Abbas the Great, builder of Bazaar at Ispahan	1585
Seljukian dynasty	1037	Husein Shah, last of the Sufis	1694
Ghengis Khan	1205		
Ghazan Khan builds mosque at Tabreez .	1294		

Unfortunately for the completeness of our account of the Saracenic style, the architectural history of Persia is a complete blank for the first six centuries of the Hejra. Nothing remains of the ancient glories of Bagdad except a few fragments of the walls of the Madrissa, and perhaps one or two tombs. Bussorah and Kufa are equally destitute of any architectural remains of the great age of the Caliphs. Indeed, there does not seem to be one single mosque or building now to be found between the Euphrates and the Indus belonging authentically to the earlier centuries of the Mahometan era, and in such a state as would enable us to say what the style of those days was, or how far it resembled or differed from the contemporary styles in the neighbouring countries.

Much of this may be owing to our imperfect knowledge of the subject, but more perhaps to the fact of the Persians never having been temple-builders, and consequently never having possessed a monumental style capable of producing permanent buildings. For though the Achæmenians and Sassanians did produce some durable structures, it seems to have been under the direct influence of the Greeks and Romans, while all the native Assyrian and Babylonian dynasties were content to build with wood and mud, or some equally perishable materials. In consequence of this, if we except some buried fragments, all has perished; and of the architecture, properly so called, scarcely a vestige has come down to our time.

[1] In speaking of Persia as one of the provinces into which Saracenic architecture is divided, it is necessary to include all the countries from the Euphrates to the Indus, thus comprising Mesopotamia and Armenia.

So it appears to have been with Bagdad in the days of its glory. The walls of the palaces seem to have been of sun-dried bricks, and the whole constructive parts of wood, covered, it may have been, with gold and silver plates, and painted with all the hues of the rainbow, but nevertheless perishable, and certain to go to decay as soon as the maintaining hand of a resident sovereign was withdrawn.

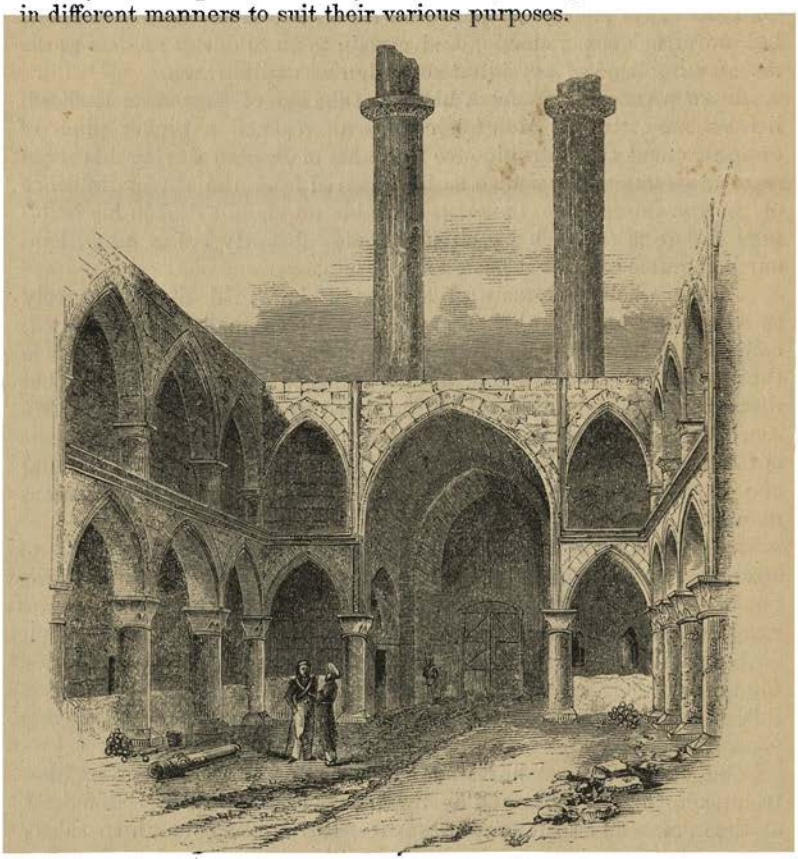
From what we know from history of the age of Haroun el Rasheed, it is probable that no Moorish court ever reached a higher pitch of enlightenment and magnificence than that of Bagdad during his reign (A.D. 786–809). It was also so far removed from the direct influence of the Byzantine style, that it is probable we should find in his buildings the germ of much which now comes abruptly before us without our being able to trace it back to its origin.

In the whole architectural history of the world there is scarcely so complete a break as this, and scarcely one so much to be lamented, considering how great and how polished the people were whose art is thus lost to us. Let us hope, however, that it is not entirely lost; but that some fragments may yet be recovered by the first who earnestly searches for them. But in the mean while we must pass on to the age of Ghengis Khan, in the middle of the 13th century, before we can find one certain example of Mahometan architecture in this important district.

With such imperfect materials it will of course be impossible to attempt anything like a continuous history of Persian architecture; but we must be content with illustrating two or three of the principal buildings; by which means we shall be able to define the style with sufficient distinctness, and explain all its leading characteristics, though without being able either to trace the origin of its peculiarities, or to point out in how far they influenced the style of other countries.

One of the earliest buildings of which anything like correct illustrations have been published is the Imaret or Hospital of Oulou Jami, at Erzeroum—an arcade of two stories, surrounding on three sides a court-yard 90 ft. by 45. It is broken in the centre by what in a Christian church would be called a transept. The woodcut here given (No. 324) shows the general appearance of the arcade, and also the upper part of two minarets which flank the external porch. This porch is ornamented in the richest manner of the style. Opposite to the entrance a long gallery leads to the tomb of the founder, a circular building of very considerable elegance, the roof of which is a hemispherical vault internally, but a straight-sided Armenian conical roof on the outside. These dispositions make the plan of the building so similar to that of a Christian church, that most travellers have considered it as one—mistaken the court for the nave, and the tomb, with the gallery leading to it, for the apse and choir. There can, however, be no doubt but that it was originally built by a Mahometan, for the purpose of a hospital, or place of rest for pilgrims, during the sway of the Seljukian princes in the 12th and 13th centuries; and that its similarity to a Christian church in plan is accidental, though its details

very much resemble those of the churches of Ani and other places in Armenia. This, however, only shows that the inhabitants of the same country did not practise two styles, but only arranged the same forms in different manners to suit their various purposes.



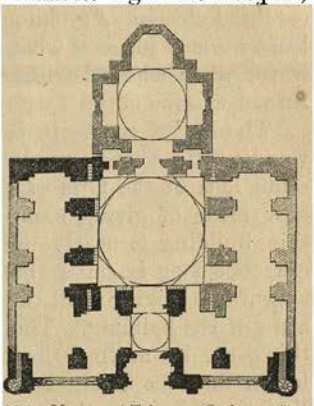
324. Imaret of Oulou Jami at Erzeroum. From Texier's Arménie et la Perse.

There is another mosque of about the same age as this at Ani, which would show even more clearly this close analogy; but it has never been drawn with sufficient correctness to admit of its being used for the purpose of demonstrating the fact which has been pointed out. But, indeed, throughout Armenia, mosques and Christian churches alternate with one another, borrowing details from one another, and making up one of the most curious mixed chapters in the history of the art; but one that remains yet to be written by some one who may visit the spot with sufficient knowledge and enthusiasm to accomplish it.

Mosque at Tabreez.

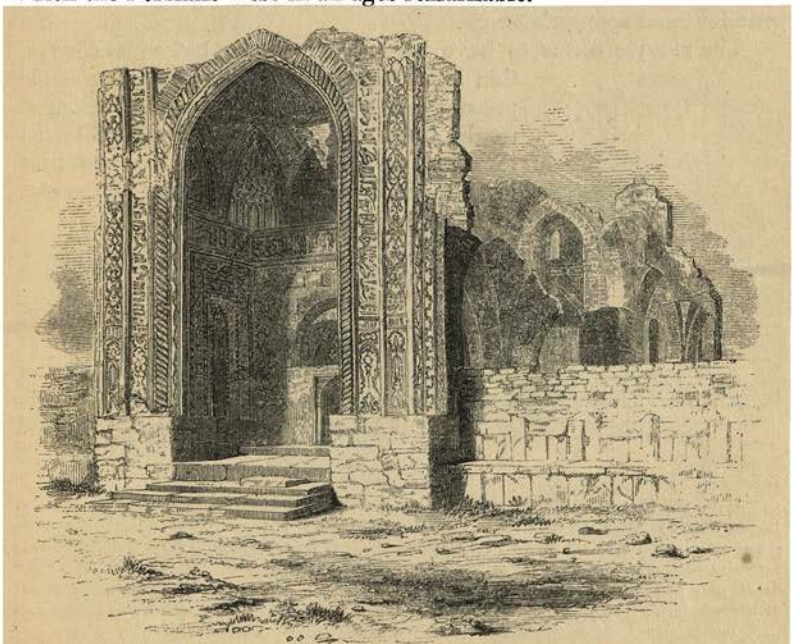
The next building that may be chosen for illustration is the ruined mosque at Tabreez, which, when perfect, must have been one of the

most beautiful in the country. Its history is not exactly known; but it certainly belongs to the Mogul dynasty, which on the death of Maugu Khan, the son of Ghengis Khan, was founded in Persia by Hulaku, the brother of the first named. He and his sons generally retained the faith of their forefathers till Ghazan Khan, who succeeded in A.D. 1294. He zealously embraced the Mahometan faith, and it was apparently to signalise the conversion that he began the mosque; but whether it was finished by him or his successors is not quite apparent. As will be seen by the plan, it is not large, being only about 150 ft. by 120, exclusive of the tomb in the rear, which as a Tartar it was impossible he should dispense with.



325. Mosque at Tabreez. Scale 100 ft. to 1 in.

In plan it differs also very considerably from those previously illustrated, being in fact a copy of a Byzantine church carried out with the details of the 13th century. This fact confirms the belief that the Persians before this age were not a mosque-building people. In this mosque the mode of decoration is what principally deserves attention, the whole building, both externally and internally, being covered with a perfect mosaic of glazed bricks of the most brilliant colours, and wrought into the most intricate patterns, and with all the elegance for which the Persians were in all ages remarkable.

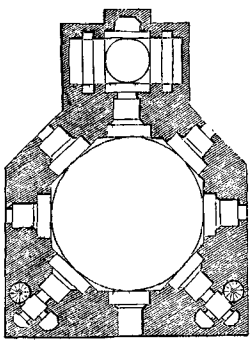


326. View of ruined Mosque at Tabreez. From Texier's Arménie et la Perse.

Europe possesses no specimen of any style of ornamentation with which this can be compared. The painted plaster of the Alhambra is infinitely inferior, and even the mosaic painted-glass of our cathedrals is a very partial and incomplete ornament compared with the brilliancy of a design pervading the whole building, and entirely carried out in this style. From the time, however, of the oldest Assyrian palaces, to the present day, colour has been in this country a more essential element of architectural magnificence than form; and here at least we may judge of what the halls of Nineveh and Persepolis once were, when adorned with colours in the same manner as this now ruined mosque of the Tartars.

Though of course it is impossible to represent it properly in a woodcut, the view[1] (woodcut No. 326) of its principal portal will give some idea of the form of the mosque, and introduce the reader to a new mode of giving expression to portals, which after the date of this building is nearly universal in the East. As will be seen, the entrance-door is small, but covered by a semi-dome of considerable magnitude, giving it all the grandeur of a portal as large as the main aisle of the building. The Gothic architects attempted something of this sort, by making the outer openings of their doors considerably larger than the inner; in other words, by *splaying* widely the jambs of their portals. By this means, in some of the French cathedrals, the appearance of a very large portal is obtained with only the requisite and convenient size of opening; but in this they were far surpassed by the architects of the East, whose lofty and deeply recessed portals, built on the same plan as the example here shown, are unrivalled for grandeur and appropriateness.

The mosque seems to have been deserted long before its destruction by an earthquake in the beginning of the present century, owing to its having belonged to the Turkish sect of the Sonni, while the Persians have during the last five centuries been devoted Shiites or followers of the sect of Ali and his martyred sons.



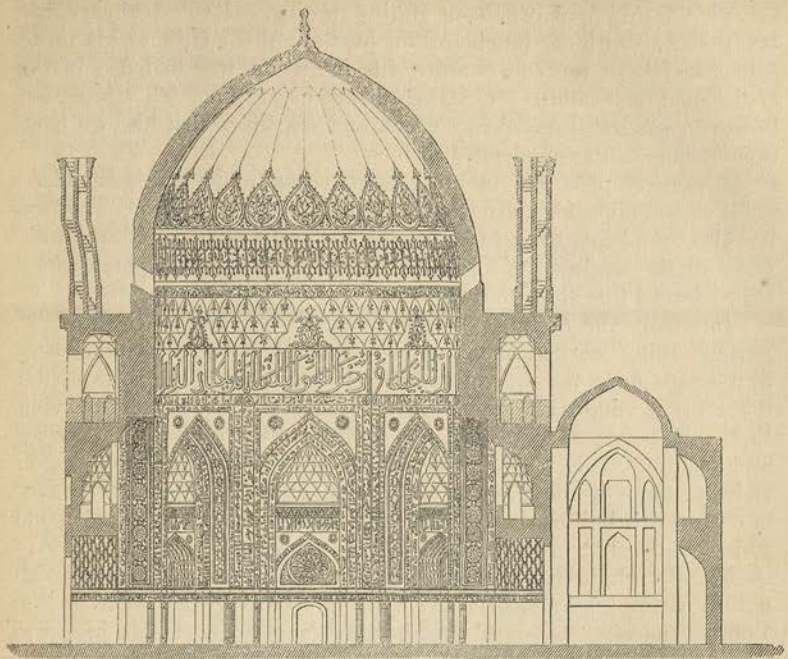
327. Tomb at Sultanieh. Scale 100 ft. to 1 in.

Tomb at Sultanieh. (A.D. 1303–1316.)

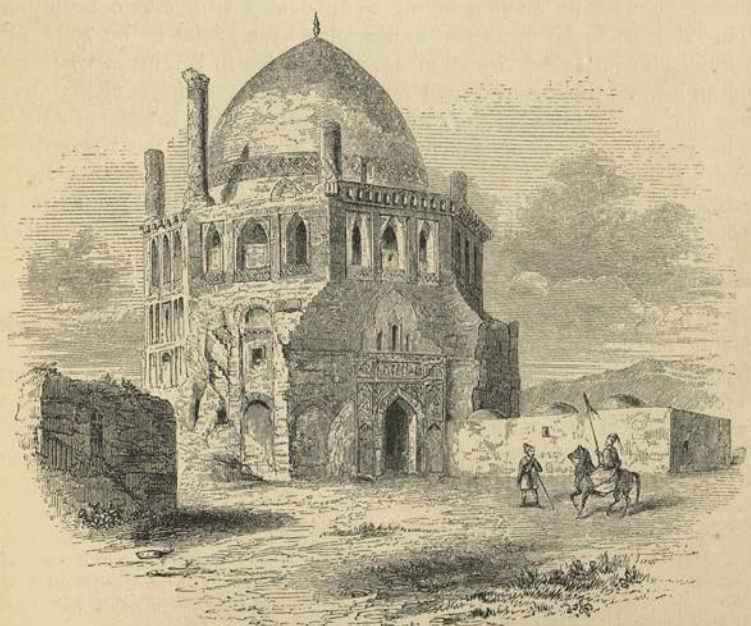
Mahomed Khodabendah, the successor of Ghazan Khan, the builder of the mosque at Tabreez last described, founded the city of Sultanieh, and, like a true Tartar, his first care was to build himself a tomb[2] which should

[1] Both the plan and view are taken from Baron Texier's 'Arménie et la Perse,' which gives also several coloured plates of the mosaic decorations, from which their beauty of detail may be judged, though not the effect of the whole.

[2] Texier, from whose work the illustrations are taken, ascribes the building to another Khodabendah of the Sufi dynasty, A.D. 1577–85. A little knowledge, however, of the style should have shown him that the monument was 200 or 300 years older than that king; and besides, the Sufis, not being Tartars, would not build tombs anywhere, much less in Sultanieh, where they never resided.



328. Section of the Tomb of Sultan Khodabendah at Sultanieh. From Texier's Arménie et la Perse. Scale 50 ft. to 1 in.



329. View of the Tomb at Sultanieh.

become the principal ornament of his new city. Ker Porter[1] says that, being seized with as much zeal for his new Shiite faith as his predecessor had been for the Sonnite, his intention was to lodge in this mausoleum the remains of Ali and his son Hossein. This intention, however, was not carried into effect, and we know that his own bones repose alone in their splendid shrine.

In general plan the building is an octagon, to which is added a small chapel opposite the entrance, in which the body lies. The front has also been brought out to a square, not only to admit of two staircases in the angles, but also to serve as a backing to the porch which once adorned this side, but which has now entirely disappeared.

Internally the dome is 81 ft. in diameter by 150 ft. in height, the octagon being worked into a circle by as elegant a series of brackets as perhaps ever were employed for this purpose. The form of the dome too is singularly graceful and elegant, and was much preferable to the bulb-shaped double domes subsequently common in Persian architecture. The whole is covered with glazed tiles, rivalling in richness those of the mosque at Tabreez, and with its general beauty of outline this building affords one of the best specimens of this style to be found either in Persia or any other country.

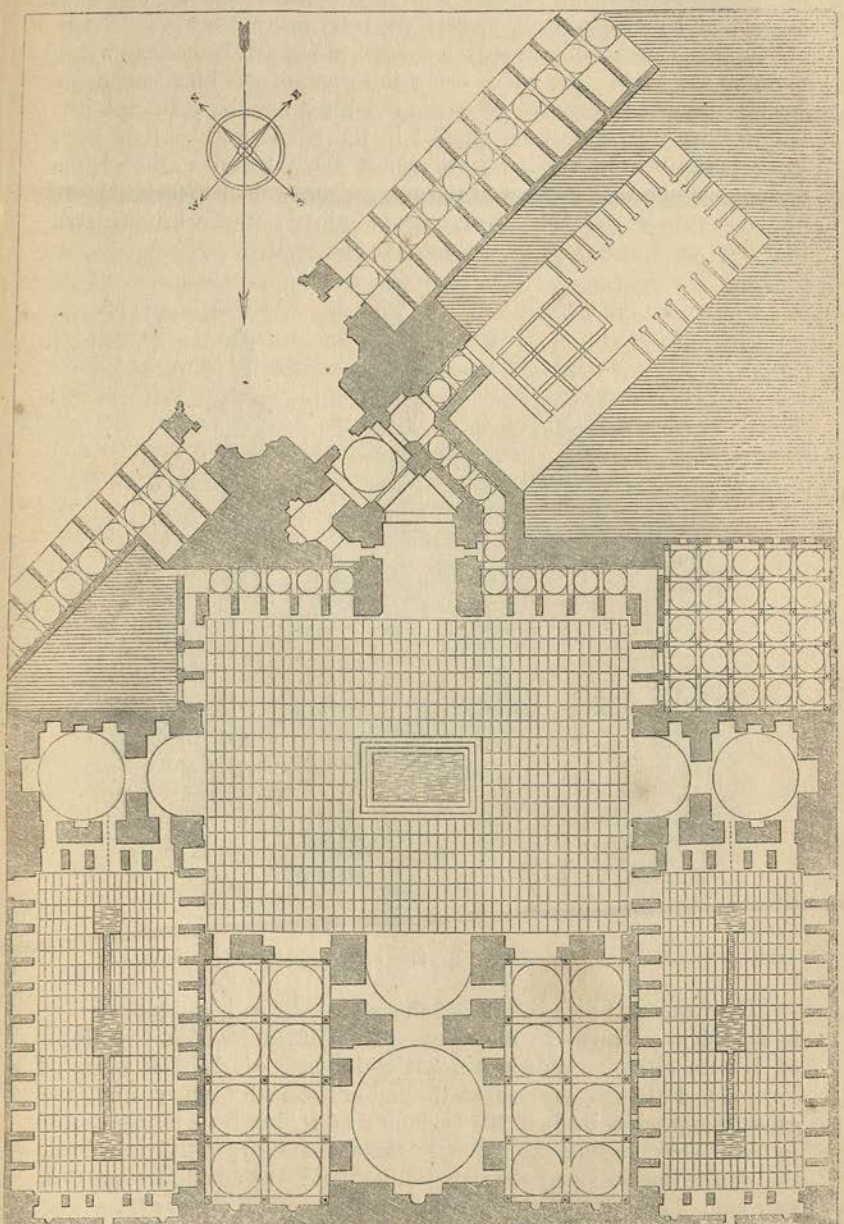
These works were, however, far surpassed in magnificence, though not in beauty, by those of the dynasty of Sufis, who succeeded in 1499. The most powerful and brilliant sovereign of this race was Shah Abbas the Great (A.D. 1585–1629), whose great works rendered his capital of Ispahan one of the most splendid cities of the East. Among these works, by far the most magnificent was the great *Maidan*, or bazaar, with its accompanying mosque and subordinate buildings. The Maidan is an immense rectangular area, 2600 ft. by 700,[2] surrounded on all sides by an arcade two stories in height, consisting of 86 arches on the longer, and 30 on the shorter sides, richly ornamented, and broken in the centre of each face by a handsome edifice. The great mosque is at one end, opposite to which is the bazaar gate, and in the longer side the Looft Ullah mosque: facing this is the Ali Kassi gate, which, in its various stories and complicated suites of apartments, is in fact a palace rather than a gateway as we understand the term.

The dimensions of the great mosque or Mesjid Shah may be judged of from the plan opposite. As will be perceived, the Maidan not facing Mecca, an angle is made in the entrance, which however is far from being unfavourable to the general picturesque effect of the group. The mosque itself is a rectangular building, the internal dimensions of which are 223 ft. by 130, the centre compartment being surmounted by a dome 75 ft. in diameter and 110 ft. high internally; but being double, like most domes of this age, its external height is 165 ft.,

[1] Travels, vol. i. p. 277.

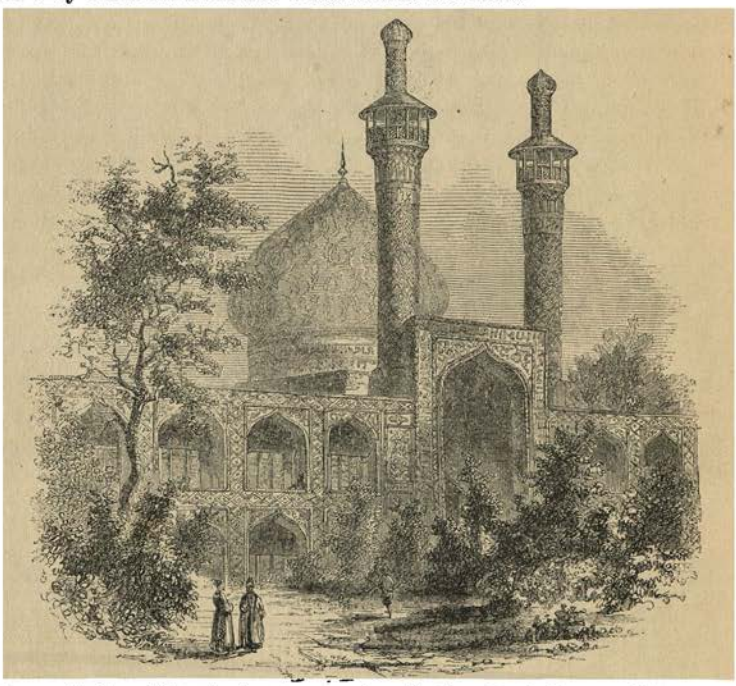
[2] Ker Porter's Travels, vol. i. p. 432 *et seq.* More than twice the area of the Crystal Palace in Hyde Park. The Piazza of St. Mark's at Venice, which resembles it more than any other area, is only 560 feet long, with a mean breadth of about 250 feet.

which is also the height of the minarets attached to the mosque. On three sides the mosque is surrounded by court-yards, richly ornamented, and containing fountains and basins of water for the prescribed ablutions of the faithful. The principal court measures 225 ft. by 170,



330. Great Mosque at Ispahan. From Texier's work. Scale 100 ft. to 1 in.

and, surrounded as it is on all sides by façades in the richest style of Persian polychromatic decoration, the brilliancy of its architectural effect is almost unrivalled by any other example of its class. Both in architectural forms and in the style of ornament this mosque is inferior to those at Tabreez and at Sultanieh; but for mass and amount of decoration it is perhaps the most magnificent specimen in existence. Taken altogether, the Maidan Shah, and its accompanying mosques and gates—the whole being the work of one king and on one design—present a scene of gorgeous, though it may be somewhat barbarous splendour almost unequalled in the whole world. Even now, in its premature decay, it strikes almost every traveller, though the style is not one that looks well in ruin, owing to the perishable nature of the materials and the tawdry effect of glazed tiles, when it is seen that they are a mere surface ornament to the walls.



331. Madrissa of Sultan Husein at Ispanan. From Flandin and Coste's Voyage en Perse.

The forms and peculiarities of this style will be better judged of—in a woodcut at least—by the representation of the *Madrissa*, or college, of Husein Shah (woodcut No. 331), the last of the Sufi kings of Persia; and though erected at the end of the 17th century, while the great mosque was built in the beginning of it, but little change seems to have taken place in the interval: the minarets are of the same form, the double bulb-shaped dome is similar, and the double arcades that surround the court of the mosque are the same in form as those that encircle the Maidan Shah.

From the time of the Afghan invasion, which took place during the reign of the Sultan Husein in the beginning of the last century, Persia does not seem to have recovered herself sufficiently to undertake any great works; some palaces, it is true, have been built, and mosques of inferior dimensions, but nothing really remarkable of late years. The influence of the corrupt styles of Europe has become too apparent to enable us to hope that she will ever again be able to recover her place in the domain of art.

When we have completed the survey of the Saracenic style by describing it as found in India and Spain, we shall be better able to judge of the merit of the Persian form of it. In the mean while it is sufficient to observe that its chief historic interest rests on the fact of its being a modern reproduction of the style of the ancient palaces of Nineveh and Babylon, using the same thick walls of imperfectly burned bricks, and covering them with the same brilliant coloured decorations of glazed and painted tiles and bricks, carrying this species of decoration to an extent never attempted in any other part of the world. This too constitutes its principal claim to interest in an artistic point of view, showing how far polychromatic decoration may be used, not only internally but externally, without any offence to good taste, but, on the contrary, with the most complete success in producing that beauty and splendour which is the aim of all architectural utterance.

PALACES.

The Persian princes showed almost as much taste and splendour in their palaces as in their mosques; but these were not from their nature so capable of architectural display as the others. An Eastern palace neither requires that mass of apartments and offices which are indispensable in Europe, nor does the climate admit of their being massed together so as to form a single group, imposing from its size. On the contrary, the Persian palaces generally consist of a number of pavilions and detached halls, and smaller groups of apartments scattered over a large space interspersed with trees and gardens, and only connected by covered arcades or long lines of canals, the centre of which is adorned by fountains of the most elegant forms.

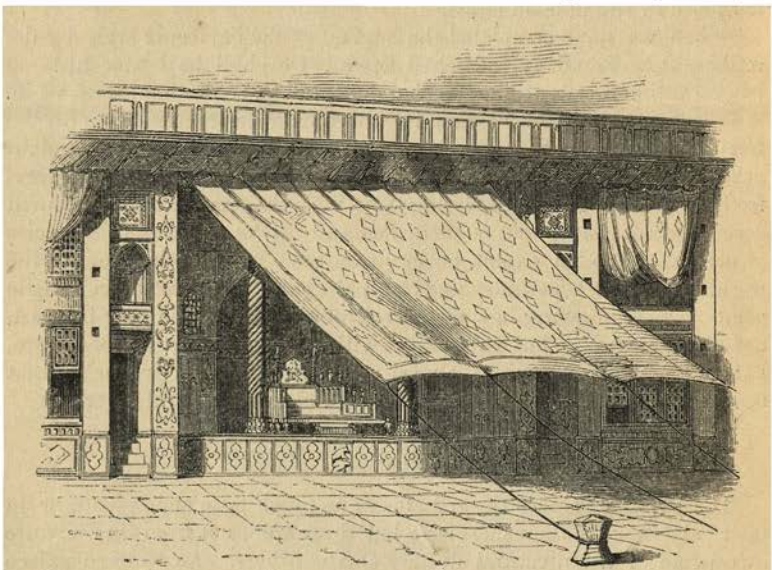
Individually these detached buildings are often of great beauty and most elaborately ornamented, and the whole effect is pleasing and tasteful; but for true architectural effect they are too scattered, and the whole is generally very deficient in grandeur.

The throne-room at Teheran (woodcut No. 332) is a fair specimen of these buildings, though in fact it is only a porch or deep recess opening on a garden, the front being supported or ornamented by two twisted columns. In front of these a massive curtain is drawn out when the room is used, and both for colour and richness of effect the curtain is virtually the principal feature in the composition.

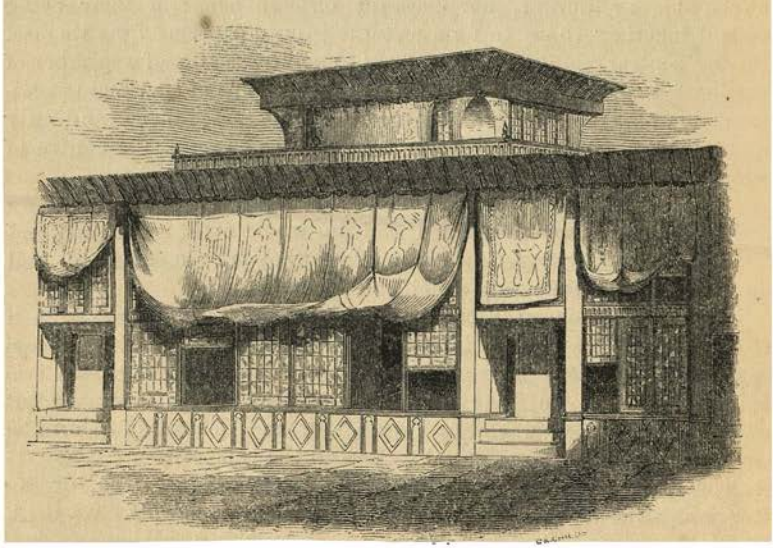
The next example is taken from the palace of Char Bagh, or the four gardens at Ispahan, and shows the general picturesque form these buildings assume. It is by no means so favourable a specimen as the

last, though this may arise more from the nature of the building than from any want of taste on the part of its architect. Many of the pavilions in the same palace are of great lightness and elegance, though, most of them being supported by wooden pillars, and being of very ephemeral construction, they hardly belong to the higher class of architectural art.

The Caravanserais are another class of buildings, not peculiar, it



332. Throne-room at Teheran. From Nineveh and Persepolis Restored.



333. Palace at Ispahan. From Nineveh and Persepolis Restored.

is true, to Persia, but which, from the character of the traffic in merchandise, and the general insecurity of the roads along which it is conducted, have received a great development in that country. Internally, their usual form is that of a square court-yard, surrounded by a range of arcades generally two stories in height, each arch opening into a small square cell at the back. Externally they present only a high plain wall, surmounted by battlements and flanked by towers at each angle, and sometimes also by additional towers in the longer faces. The principal architectural ornament is lavished on the gateways, which are almost always higher than the contiguous walls, and often display great beauty of design combined with considerable elaboration of detail.

It is not, however, only in these larger monuments that the Persians show an appreciation of the beautiful and a power of expressing it. As in most Eastern nations, the feeling seems innate, and all the minor objects show it as well as the more important ones. They are now too deeply depressed to attempt much; but it only seems to require a gleam of returning sunshine to enable them again to rival in art the ancient glories of Nineveh and Persepolis, provided they can avoid the snare of copying, which has been fatal to the art of most modern nations.

CHAPTER IV.

INDIA.

CONTENTS.

Local character of style — Ghazni — Remains at Delhi — Jaunpore — Mosques at Gour — Mandoo — Mosque at Futtehpore Sicri — Mosque of Shah Jehan at Delhi — Tombs — Tombs at Agra and Old Delhi — The Taje Mehal—Great Dome at Beejapore — Palaces: of Akbar; of Shah Jehan.

CHRONOLOGICAL MEMORANDA.

	DATES.		DATES.
Sabuktagin the Ghaznavide. First Mahometan invasion of India	A.D. 975*	Yusuf Khan establishes dynasty at Beejapore	A.D. 1501
Mahmoud, conqueror of India	997	Humayun, builder of tomb at Old Delhi .	1531
Shahab ud deen establishes Ghori dynasty	1183	Akbar, builder of mosque and palace at Futtehpore Sicri—tomb at Secundra .	1556
Kootub ud deen establishes Pathan dynasty, builder of mosque at Delhi	1206	Muhammed, builder of great dome at Beejapore	1626
Sekander Shah, builder of mosque at Gour	1358	Shah Jehan, builder of palaces at Delhi and Agra. Taje Mehal at Agra . .	1628
Khoja Jehan, builder of mosque at Jaunpore	1397	Aurungzebe	1658
Baber establishes Mogul dynasty . . .	1494		

* If not otherwise stated, the date given is that of the beginning of the reign.

During the permanence of the Roman empire a great belt of stationary civilized nations extended nearly due eastward from the shores of the Mediterranean to the Bay of Bengal. Uninfluenced by their arts or civilization, two great wandering hordes hung upon the northern and southern frontiers. The Arabs, as the nearest and most impetuous, first burst their bonds, and spread over Syria, Egypt, and Persia. The three following centuries sufficed not only to expend their energy, but to steep them in the luxury and enervation of those nations whom they had subdued, more in consequence of the vices of the conquered races than from their own prowess. The Arabs in their turn made way for the irruption of the great Turkish or Tartar tribes, who, from being simple shepherds pasturing their flocks on the grassy plains of Upper Asia, became a race of conquerors extending their victorious arms over the fairest part of the inhabited globe. After three centuries of continued progress, Turkish governors ruled over all the Mahometan kingdoms of the East, extending from the Nile and the Adriatic to the mouth of the Ganges.

Thus we find in the earlier Mahometan architecture of Egypt a purely Arabic elaboration of the Byzantine style; but with a gradual introduction of a Tartar element under the Memlook Sultans. In Persia the same was probably the case; but in India the Arabic phase is

entirely lost; and when we first meet with examples of Mahometan architecture in this country, it is a Tartar form of the older Sassanian art.

Those Moslems who conquered India were from first to last of Tartar origin—Toorks, Pathans, and Moguls. No Arab, and indeed no purely Persian race, ever crossed the boundary during that period, and the consequence is, that we find there a combination of Tartar and Hindu architecture, differing in many essential points from all other forms of Saracenic art, though resembling the Persian more than any other.

The principal local difference arises from its being founded on the Hindu, or rather on the Jaina style; but the great essential characteristic is the universal prevalence of tombs, and of the forms arising from this peculiarity.

In Egypt and in Persia the tombs appear timidly, and as if attached to the mosques. In India it more generally happens that the mosques are attached to the tombs; the latter being by far the noblest and most important buildings now found in India, and those which give form and character to the style.

GHAZNI.

Towards the latter part of the 9th century the power of the Caliphs of Bagdad was sinking into that state of rapid decline which is the fate of all Eastern powers. During the reign of Al Motamed, 870–891, Egypt became independent, and the northern province of Bokhara threw off the yoke under Nasr ben Ahmed, the governor appointed by the Caliph, the descendant of Saman, a robber chief, who declared and maintained his independence, and so formed the Samanian dynasty. After about a century of existence, Sabuktagin, a Turkish slave belonging to a general of one of the last of the Samanian kings, rendered himself also independent of his master, and established himself in Ghazni, of which he was governor, founding the well-known dynasty of Ghaznavides. His successor Mahmoud, A.D. 977–1030, is one of the best-known kings in Indian history, owing to his brilliant campaigns in India, and more especially that one in which he destroyed the celebrated temple of Somnath.

On his return from an earlier campaign, in which he sacked the town of Muttra, we learn from Ferishtah that the king ordered a magnificent mosque to be built of marble and granite, afterwards known by the name of the Celestial Bride. He founded a university near to it. When the nobility of Ghazni perceived the taste of their king in architecture, they also endeavoured to vie with one another in the magnificence of their palaces, as well as in the public buildings which were raised for the embellishment of the city. "Thus," continues the historian, "the capital was in a short time ornamented with mosques, porches, fountains, aqueducts, reservoirs, and cisterns, beyond any city in the East."

The plain of Ghazni still shows the remains of all this splendour; and in the dearth of information regarding Persian art of that age, a

knowledge of this would be one of the most interesting and valuable contributions we could receive. These ruins, however, have not been as yet either examined or described;[1] and even the tomb of the Great Mahmoud is unknown to us, except by name,[2] notwithstanding the celebrity it acquired from the removal of its gates to India at the termination of our disastrous campaigns in that country.

These are of Deodar pine,[3] and the carved ornaments on them are so similar to those on the mosque of Ebn Touloun at Cairo, as not only to prove their being of the same age, but also to show how similar the modes of decoration were at these two extremities of the Moslem empire at that time.

Two minars still adorn the plain outside the city, and form, if not the most striking, at least the most prominent of the ruins of that city. Neither of them were ever attached to any mosques; they are indeed pillars of victory, or *Jaya Sthambas*,[4] like those in India, and are such as we might expect to find in a country so long Buddhist. One of them was erected by Mahmoud himself; the other was built, or at least finished, by Masoud, one of his immediate successors.[5]

The lower part of these towers is of a star-like form—the plan being apparently that of two squares placed diagonally the one over the other. The upper part, rising to the height of about 140 ft. from the ground, is circular; both are of brickwork, covered with ornaments of terra-cotta of extreme elaboration and beauty, and retaining its sharpness to the present day.

Several other minars of the same class are found farther west, even as far as the roots of the Caucasus,[6] which, like these, were pillars of victory, erected by the conquerors on their battle-fields. None of these have the same architectural merit as those of Ghazni, at least in their present state, though it may be that their ornaments, having been in stucco or some perishable material, have disappeared, leaving us now only the skeleton of what they were.

The weakness of Mahmoud's successors left the Indians in repose for more than a century and a half; and, like all Eastern dynasties, the Ghaznavides were gradually sinking to inevitable decay, but their fall was precipitated by the crimes of one of them, which were fearfully avenged by the destruction of their empire and capital by Ala ud deen, and the final supercession of their race by that of Ghori, in the person of Shahab ud deen, in the year 1183.

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[1] It is very much to be regretted that not one single officer accompanied our armies, when they passed and repassed over Ghazni, with sufficient taste and knowledge to appreciate the interest of these ruins; and it is to be hoped, if an opportunity should again occur, that their importance to the history of art in the East will not be overlooked.

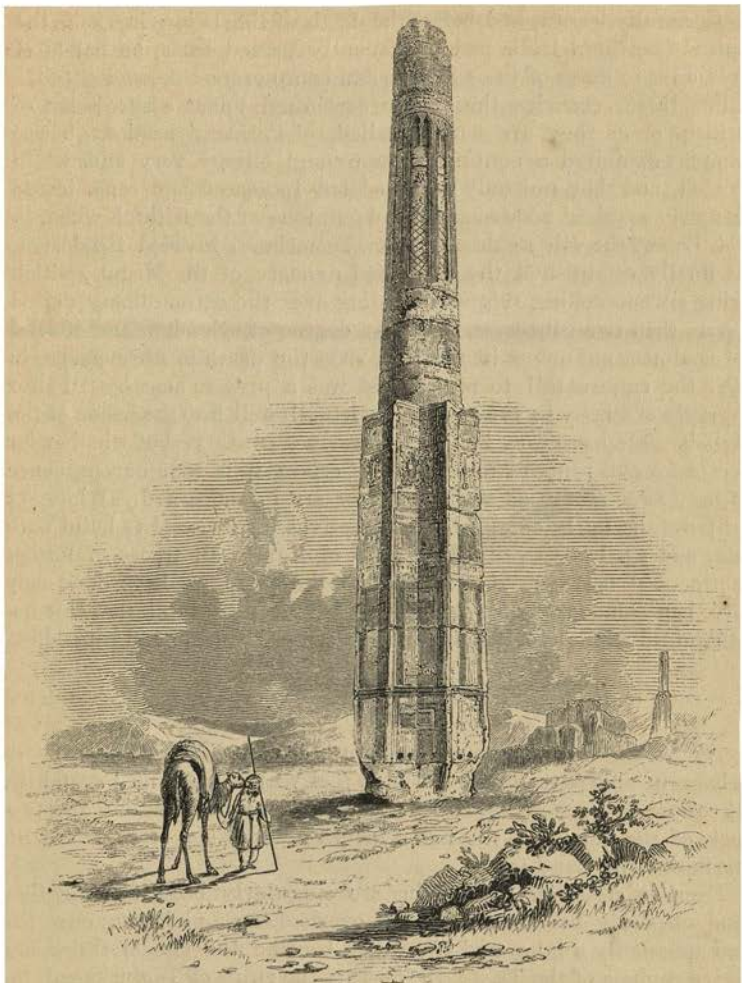
[2] The sketch of the tomb published by M. Vigne in his Travels in Afghanistan gives too confined a portion of it to enable us to judge either of its form or detail. The gate in front is probably modern, and the foiled arches in the background appear to be the only part that belongs to the 11th century.

[3] The tradition that these gates were of sandal-wood, and brought from Somnath, is entirely disproved by the fact of their being of the local pine-wood, as well as by the style of decoration, which has no resemblance to Hindu work.

[4] See pp. 6, 81, &c.

[5] See translation of the inscription on these minars, J.A.S.B., No. 134, for 1843.

[6] Two are represented by Dubois de Montpéreux, Voyage autour du Caucase.



334. Minar at Ghazni. From a drawing by G. T. Vigne, Esq.

With all the vigour of a new race, the Ghorians set about the conquest of India. After sustaining a defeat in the year 1191, Shahab ud deen again entered India in 1193, when he attacked and defeated Pirthay, Raja of Delhi. This success was followed by the conquest of Canouge in 1194; and after the fall of these two, the greatest capitals and empires in the peninsula, India may be said to have been conquered before his death, which happened in 1206.

At his death his great empire fell to pieces, and India fell to the share of Kootub ud deen Ibek. This prince was originally a Turkish slave; afterwards he became one of Shahab ud deen's generals, and contributed greatly by his talents and military skill to the success of his master. He and his successor, Altumsh, continued nobly the work

so successfully begun, and before the death of the latter, in 1235, the empire of northern India had permanently passed from the hands of the Hindus to those of their Mahometan conquerors.

For three centuries the empire continued under a succession of Turkish, or as they are usually called, of Pathan dynasties. These monarchs exhibited a continued vigour and energy very unusual in the East, and they not only sustained but increased and consolidated this newly acquired accession to the dominions of the faithful, when, in 1494, Baber, the 4th in descent from Tamerlane, invaded Hindostan, and finally established the celebrated dynasty of the Moguls, which during six succeeding reigns, extending over the extraordinary period of more than two centuries, reached a degree of splendour and of solid power almost unknown in the East. On the death of Aurungzebe, in 1707, the empire fell to pieces, and was a prey to anarchy till after the battle of Plassy in 1757, when it virtually fell into the hands of the English. We have now held it for nearly a century, but whether for good or for evil remains to be seen. Certain it is that our influence has been fatal as far as architecture or art is concerned. Wherever our power is fairly established, the natives have ceased to build with taste, and we have even laboured to obliterate all traces of former architectural beauty. It may be that the good we have done may more than compensate for this; but it is painful to think that this has been gained at the sacrifice of much that was beautiful and refined.

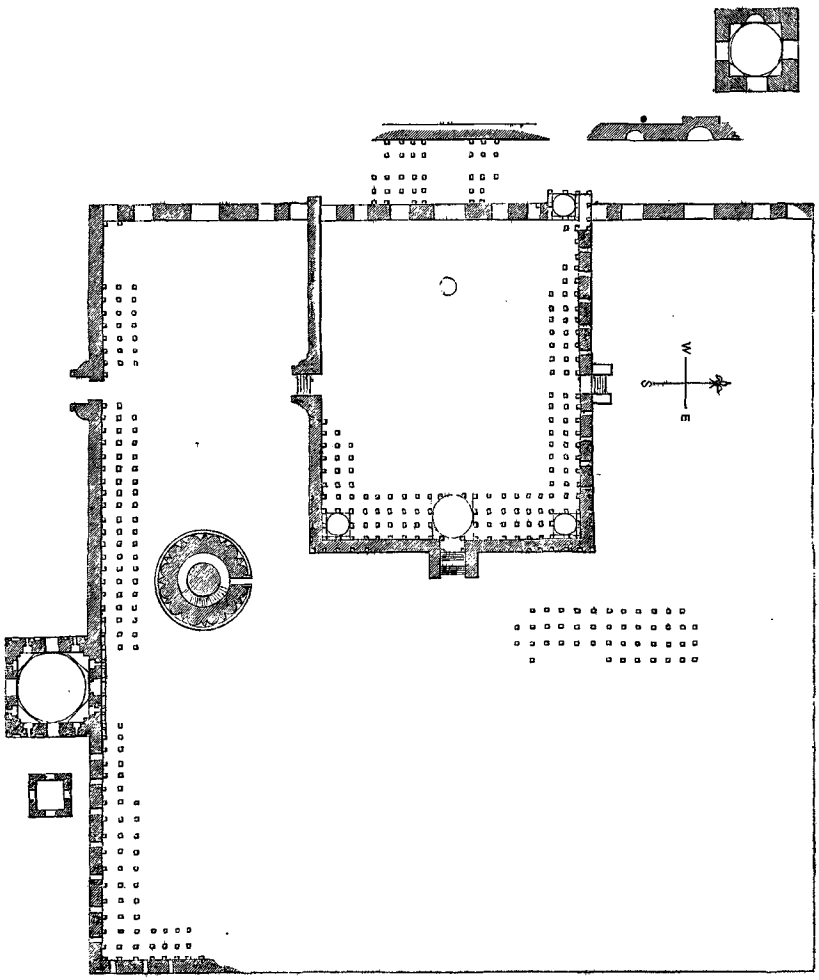
Kootub.

By far the most interesting group of ruins that exist in India, or perhaps in any part of the world, is that which is grouped round the tall column of Victory which Kootub erected at Delhi within the precincts of the palace of the unfortunate Pirthay Raja, to celebrate his conquest of the Hindus.

Even in situation these ruins are singularly beautiful, for they stand on the gentle slope of a hill overlooking a plain that once had been apparently a lake, and afterwards became the site of three successive capitals of the East. In front are the ruins of Togluckabad, the gigantic fort of an old Pathan chief; and farther north the plain is still covered with the ruins of Old Delhi, the capital of the later Pathans and earlier Moguls. Beyond that, at the distance of 9 or 10 miles, are seen the towers of Shahjehanabad, the modern capital, and still the seat of the nominal monarchy of the Great Mogul. Still farther north are situated the civil station and cantonments of the British rulers of the country. It is a fortunate circumstance that these were not placed here, as at Agra, in the midst of the ruins, for it is to this that we owe their preservation. But for the distance it is probable that marble columns would have been taken for all purposes for which they might have been available, with a total disregard for the beauty and interest of the remains thereby annihilated. Even as it is, the buildings belonging to the celebrated Shahlimar gardens, which were the only buildings of importance in the neighbourhood of the English

station, have disappeared; but this is of slight importance as compared with the ruins to the south.[1]

The general arrangement of the principal ruins will be understood from woodcut No. 335, which was taken with great care, though the



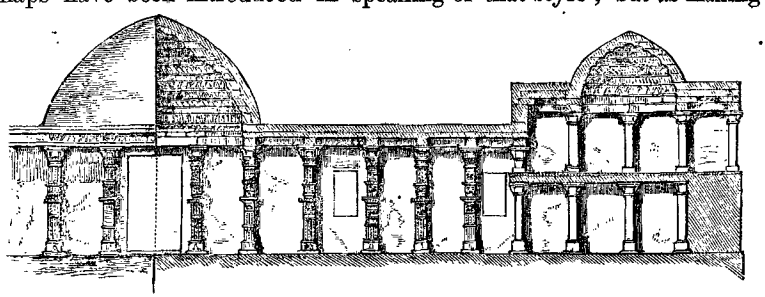
335. Plan of Ruins in Old Delhi. From a plan by the Author. Scale 100 ft. to 1 in.

[1] At one time a better influence seems to have prevailed, and some money was spent in repairing the Kootub Minar. It is true this was done in the worst possible taste. A door was added in the true style of Strawberry Hill Gothic; and a kiosk was stuck on its summit copied from the garden pavilion of some modern dwelling in Delhi, and balustrades added to the balconies in the same taste. A dome, too, surmounted the whole; but as this was of lath and plaster, or some such material, it has disappeared long ago, and it would be well if the other improvements had so also; but the masonry was repaired and consolidated, and we must therefore be thankful that so much was done, and not grumble at the mode.

scale to which it has been necessary to reduce it prevents all its peculiarities from being seen. To understand it, it is necessary to bear in mind that all the pillars are of Hindu, and all the walls of Mahometan architecture.

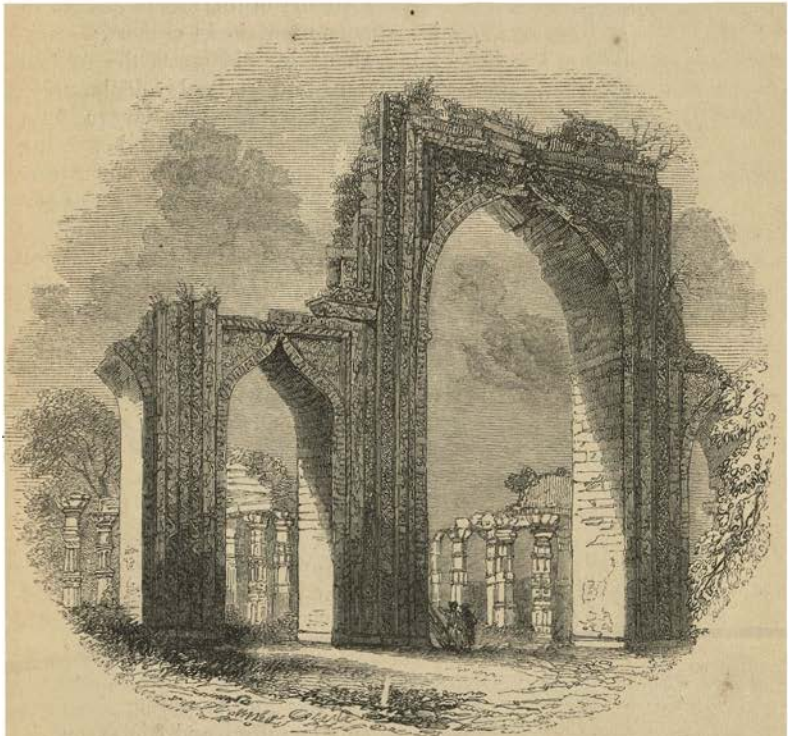
It is by no means easy to determine whether the pillars now stand as originally arranged by the Hindus, or whether they have been taken down and re-arranged by the conquerors. In this instance it seems most probable that the former was the case, and that they were open colonnades surrounding the palace of Pirthay Raja. But supposing this to be so with regard to the pillars, it is quite evident that all the enclosing walls were erected by the Moslems, all the string-courses being covered with ornaments in their style, and all the openings possessing pointed arches, which the Hindus never used. If this is so, it is the only instance known of Hindu pillars being left undisturbed. The celebrated contemporary mosque at Canouge is undoubtedly a Jaina temple, rearranged on a plan precisely similar to that of the mosque of Amrou at Old Cairo (woodcut No. 313); but as the roof and domes are all of Jaina architecture, no trace of the Moorish style is to be seen internally: the exterior is as purely of Mahometan architecture. There is another mosque at Dhar, near Mandoo, of much more modern date, which is without doubt a Jaina temple re-arranged, as explained p. 80. Another in the fort at Jaunpore, as well as fragments of other mosques elsewhere, all show the same system of taking down and rearranging the materials on a different plan. If therefore the pillars at Kootub are *in situ*, it is the only instance known of such being the case. It may perhaps be necessary to explain that there could be no difficulty in taking down and rebuilding any of these erections, for the joints of the pillars are all fitted with the precision that Hindu patience alone could give; and each compartment of the roof is composed of 9 stones—4 architraves, 4 angular and 1 central slab, as explained in diagram No. 47, p. 74, and all so exactly fitted, and so little dependent on cement, as easily to be taken down and put up again. The same is true of the domes, all which, being honestly and fairly fitted, would suffer no damage from the process of removal.

The section (woodcut No. 336) of one half of the principal colonnade (the one facing the great series of arches) will explain its form better than words can do. It is so purely Jaina, that it should perhaps have been introduced in speaking of that style; but as making



336. Section of part of East Colonnade at the Kootub, Old Delhi. Scale 25 ft. to 1 in.

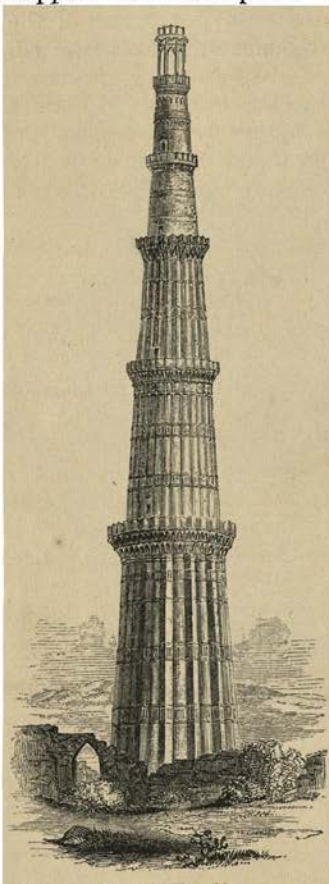
a part of the earliest mosque in India, I have preferred introducing it in this place. The pillars used here are of the same order, and similar to those used on Mount Abu (shown in woodcut No. 44), except that those at Old Delhi are much richer and more elaborate. They belong probably to the 9th or 10th century, and are among the few examples to be found in India that seem to be overloaded with ornament—there not being one inch of plain surface from the capital to the base. Still the ornament is so sharp and so beautifully executed, and the effect, in their present state of decay and ruin, so picturesque, that it is very difficult to find fault with what is so beautiful. In some instances the figures that were on the shafts of the pillars have been cut off, as offensive to Mahometan strictness with regard to idolatrous images; but on the roof and less seen parts, the crossed-legged figures of the Jaina saints, and other emblems of that religion, may still be detected.



337. Central Range of Arches at the Kootub, from a sketch by the Author.

The glory of the mosque, however, is not in these Hindu remains, but in the great range of arches on the eastern side, extending north and south for about 385 ft., and consisting of 3 greater and 8 smaller arches; the central one being 22 ft. wide and 53 high; the larger side arches 24 ft. 4 in., and about the same height as the central arch; the smaller arches are about half these dimensions, and unfortunately

are generally very much ruined. Behind this, at the distance of 32 ft., are the foundations of another wall; but whether intended to be carried as high as that in front is by no means apparent. It seems probable that the Hindu pillars between the two screens were the only part that was proposed to be covered, some of them being built into the back part of the great arches, and all above them is quite plain and smooth, without the least indication of any intention to construct a vault or roof of any sort. Besides this, a roof is by no means an essential part of a mosque; a wall facing Mecca is all that is required, and frequently in India is all that is built, though sometimes an enclosure is added in front of it to protect the worshippers from interruption. Roofed colonnades are of course not only convenient but ornamental accompaniments, yet far from being indispensable.



338. Minar of Kootub.
From a sketch by the Author.

The history of this mosque, as told in its construction, is as curious as anything about it. It seems the Afghan conquerors had a tolerably distinct idea that pointed arches were the true form of architectural openings; but being without science sufficient to construct them, they left the Hindu architects and builders whom they employed to follow their own devices as to the mode by which this form was to be attained. The Hindus, however, up to this time had never built arches, nor indeed did they for centuries afterwards. Accordingly they proceeded to make the pointed openings on the same principle upon which they built their domes. They carried them up in horizontal courses as far as they could, and then closed them by long slabs meeting at the top, the construction being in fact that of the arch of the aqueduct at Tusculum, shown in woodcut No. 239. The same architects were employed by their masters to ornament the faces of these arches, and did so by copying and repeating the ornaments on the pillars and friezes on the opposite sides of the court, covering the whole with a lace-work of intricate and delicate carving, such as no mosque ever received before or since; and though it is perhaps in a great measure thrown away and lost when used on such a scale, it is without a single exception the most exquisite specimen of its class known to exist anywhere. The stone being particularly hard and good, it retains its freshness to the present day, and

is only destroyed above the arches where the faulty Hindu construction has superinduced premature decay.

The minar is 48 ft. 4 in. in diameter at the base, and, when measured in 1794, was 242 ft. in height.[1] Even then, however, the capital was ruined, so that some 10 or perhaps 20 ft. must be added to this to complete its original elevation. It is ornamented by four boldly projecting balconies; one at 90, the second at 140, the third at 180, and the fourth at 203 ft. from the ground; between which are richly sculptured raised belts containing inscriptions. In the lower story the projecting flutes are alternately angular and circular, in the second circular, and in the third angular only; above this the minar is plain, but principally of white marble with belts of the red sandstone of which the three lower stories are composed.

The only building known to be taller than this that the Mahometans ever erected is the minaret of the mosque of Hassan, at Cairo (p. 394 and woodcut No. 320); but as this pillar at Old Delhi is a wholly independent building, it has a far nobler appearance, and both in design and finish far surpasses its Egyptian rival, as indeed it does any building of its class, so far as I know, in the whole world.

At the distance of 470 ft. north of this one a second minar was commenced, of twice its dimensions, or 297 ft. in circumference. It was only carried up to the height of 40 ft., and abandoned probably in consequence of the removal of the seat of government to Togluckabad or elsewhere.

The date of all these buildings is known with sufficient exactness from the inscriptions that cover them,[2] from which it appears that the inner court was enclosed by Shahab ud deen. The central range of arches (woodcut No. 337) was built by Kootub ud deen; the wings by Altumsh, whose tomb is behind the northern range; and the minar either built, or at least finished, by the same monarch: they extend therefore from A.D. 1196–1235, but were left incomplete at the death of the last-named king.

Having described at such length the ruins of the first buildings the Moslems erected in the old imperial city of the Hindus, we pass over the mosques at Canouge, Dhar, Mandoo, Jaunpore, &c., which were built in the same style; for, though full of interest in themselves, they do not possess sufficient individual character to require detailed descriptions of each. Nor will it be necessary again to allude to the Pillars of Victory which the Moslems erected at Gour,[3] Dowlutabad,[4] Coel, Hissar,[5] or elsewhere, wherever indeed they wished to signalise and commemorate their triumph over the Infidels.

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[1] Asiatic Researches, vol. iv. p. 313.

[2] Translated by Walter Ewer, Asiatic Researches, vol. xiv. p. 480.

[3] Daniell's Views in the East.

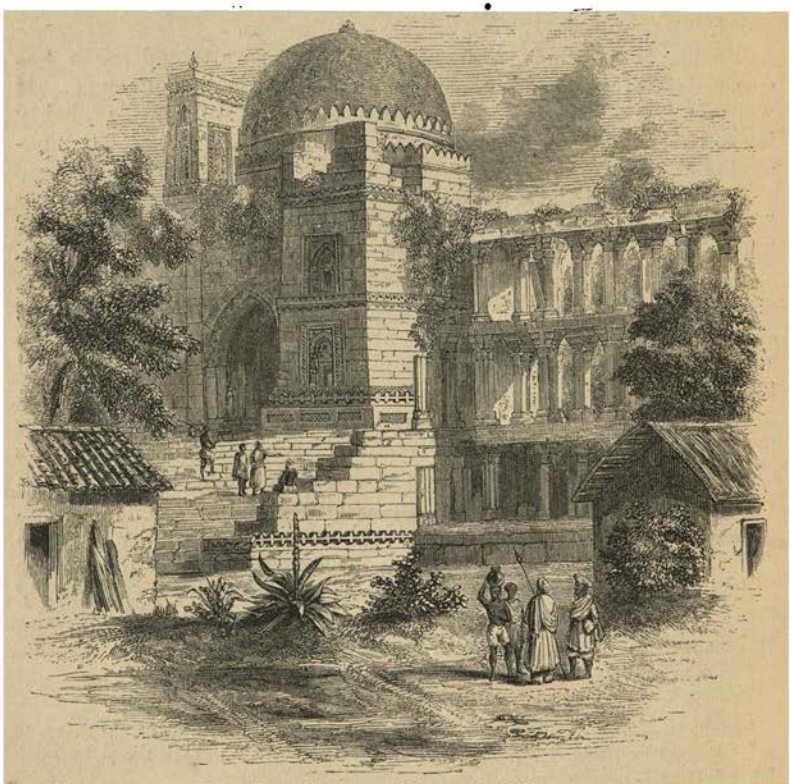
[4] Capt. Grindlay's Views in the East. In neither of these works are the plates numbered.

[5] J.A.S.B. vol. vii. plate xxvi.

Jaunpore.

About two centuries after the conquest of India by the Moslems, Khoja Jehan, the Soubahdar or governor of the province in which Jaunpore is situated, assumed independence, and established a dynasty which maintained itself for nearly a century, from A.D. 1397 to about 1478,—and though then reconquered by the sovereign of Delhi, it still retained a sort of semi-independence till finally incorporated in the Mogul empire by the great Akbar. During this period it was adorned by several large mosques, three of which still remain tolerably entire, and a considerable number of tombs, palaces, and other buildings, besides a fort and bridge, all of which are as remarkable specimens of their class of architecture as are to be found anywhere in India.

The Jumma Mesjid, or Friday mosque, was commenced by Shah Ibrahim, A.D. 1419, but not completed till the reign of Hosein 1451–1478. It consists of a court-yard 220 ft. by 214, on the western side of which is situated a range of buildings, the central one covered by a dome 40 ft. in diameter, in front of which stands a gate pyramid or *propylon*,[1] of almost Egyptian mass and outline, rising to the height of

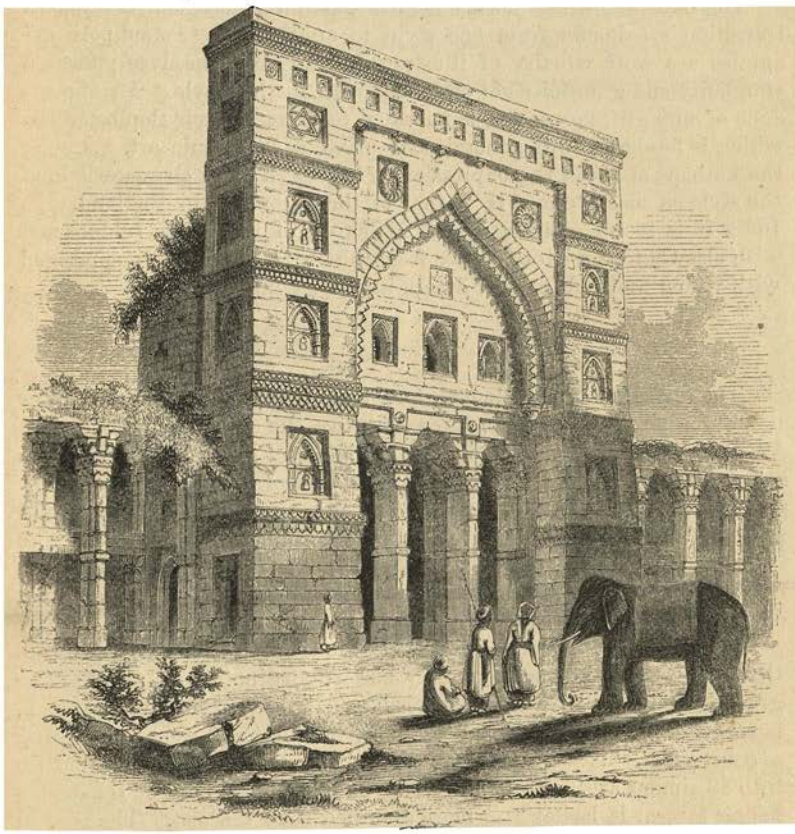


339. View of Lateral Gateway of Jumma Mesjid, Jaunpore.

[1] A view of it, not a good one, is given in Daniell's plates.

86 ft. This gate pyramid by its elevation supplied the place of a minaret, which none of these mosques possess. On each side of the dome is a compartment divided into two stories by a stone floor supported on pillars; and beyond this on each side is an apartment, 40 ft. by 50, covered by a bold pointed vault with ribs, and so constructed that its upper surface forms the external roof of the building, which in Gothic vaults is scarcely ever the case.

The three sides of the court-yard were surrounded by double colonnades two stories in height internally, but with three on the exterior, the floor of the court-yard being raised to the height of the lower story. On each face was a handsome gateway; one of which is represented in woodcut No. 339, which gives a fair idea of the style: the greater part of the eastern side of the court has been taken down and removed by the English to repair station-roads and bridges, for which in their estimation these pillars are admirably adapted. The smallest of the mosques is the Lall Durwaza or Red Gate. It is in the same



340. Lall Durwaza Mosque, Jaunpore.

style as the others; and its propylon—represented in woodcut No. 340—displays not only the bold massiveness with which these

mosques were erected, but shows also that strange admixture of Hindu and Mahometan architecture which pervaded the style during the whole period of its continuance in India.

Of the three mosques remaining at Jaunpore, the Atala Mesjid is the most ornate and the most beautiful. The colonnades surrounding its court are four aisles in depth, the outer columns of which are double square pillars, as are also those adjoining the interior of the court. The three intermediate rows are single square columns. This is altogether so like an Indian arrangement, that I at one time was half inclined to agree with Baron Hugel, and fancy that this really was an old Buddhist monastery. Its gateways, however, which are purely Saracenic, are the principal ornaments of the outer court, and the western face is adorned by 3 propylons similar to that represented in the last woodcut, but richer and more beautiful, while its interior domes and roofs are superior to any other specimen of Mahometan art I am acquainted with of so early an age.

The other buildings hardly require particular mention, though, as transition specimens from one style to another, these Jaunpore examples are well worthy of illustration, and in themselves possess a simplicity and grandeur not often met with in this style. An appearance of strength, moreover, is imparted to them by their sloping walls, which is foreign to our general conception of Saracenic art. Among the Pathans of India the expression of strength is as characteristic of the style as massiveness is of that of the Normans in England. In India it is found conjoined with a degree of refinement seldom met with elsewhere, and totally free from the coarseness usually combined with vigour and boldness of design in other countries.

Gour.

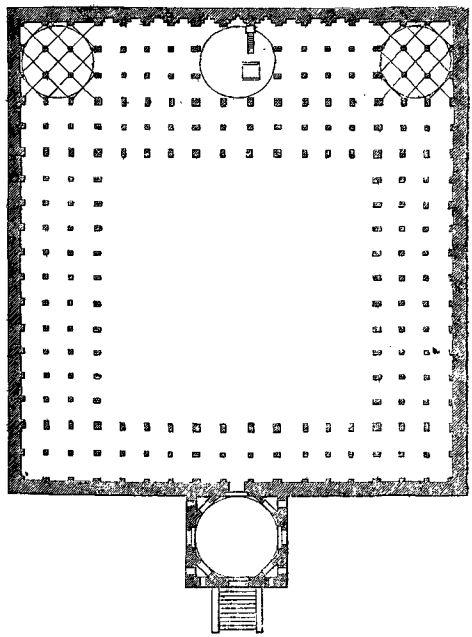
The city of Gour, in Bengal, long the Hindu capital of the lower country, and for more than three centuries the seat of an independent Pathan kingdom, possesses within its walls and in its neighbourhood a series of ruins, principally mosques, well worthy of attentive study. Owing perhaps to the materials being principally brick, they do not possess the largeness and grandeur of the Jaunpore examples. The influence of Hindu art here shows itself more in an extreme elaboration of minute detail than in any influence it exerted on the original character of the Pathan conceptions.

The worst feature in the designs of the Gour mosques is, that, like that at Cordoba, they want variety and subordination of parts. The great Adinah, built by Sekander Shah (A.D. 1358 to 1367), for instance, is a building 500 ft. north and south by 300 east and west, containing a court-yard, surrounded on all sides by a thick brick wall, cut up into 88 similar arcaded openings, only one of which, that on the centre facing Mecca, is larger and more dignified than the rest. The roof in like manner is supported by 266 pillars of black marble, of a bold and pleasing design, it must be confessed, but wanting in variety; and these and the walls support no less than 385 domes, all similar in de-

sign and construction.[1] The only variety that exists is where a platform, called the Padshah ka Tukht, or "King's throne," cuts the height as at Jaunpore into two stories. For a caravanserai such a design would be appropriate; but in an edifice where expression and beauty were absolutely required it is far too monotonous. The same defect runs through the whole group; and though their size and elegance of details, joined with the picturesque state of richly foliaged ruin in which they are now found, make them charming subjects for the pencil, they possess all the defects of design we remarked in the great halls of a thousand columns in the south of this country.[2] It seems, indeed, almost as if here we had again got among the Tamul races, and that their peculiarities were again coming to the surface, though dressed in the garb of a foreign race.

MANDOO.

A far finer specimen of a Pathan mosque is that built by the Ghori sovereigns of Mandoo, in that capital, where they reigned from A.D. 1387 to 1435. It was principally, if not altogether, erected by Hoshang, the second king, A.D. 1305 to 1432. It is smaller than the Adinah mosque, being only 290 ft. by 275 externally. Internally the court-yard is almost an exact square of 162 ft., and would be quite so, were it not that two of the piers on the east and west faces are doubled. In other respects the four sides of the court are exactly similar, each being ornamented by eleven great arches of exactly the same dimensions and height, supported by piers or pillars, each of one single block of red sandstone. The only variety attempted is, that the east side is only two arcades in depth, the north and south three, while the west side, or that facing Mecca, has five, besides being ornamented by three great domes, each 42 ft. in diameter.



341. Plan of Mosque at Mandoo.

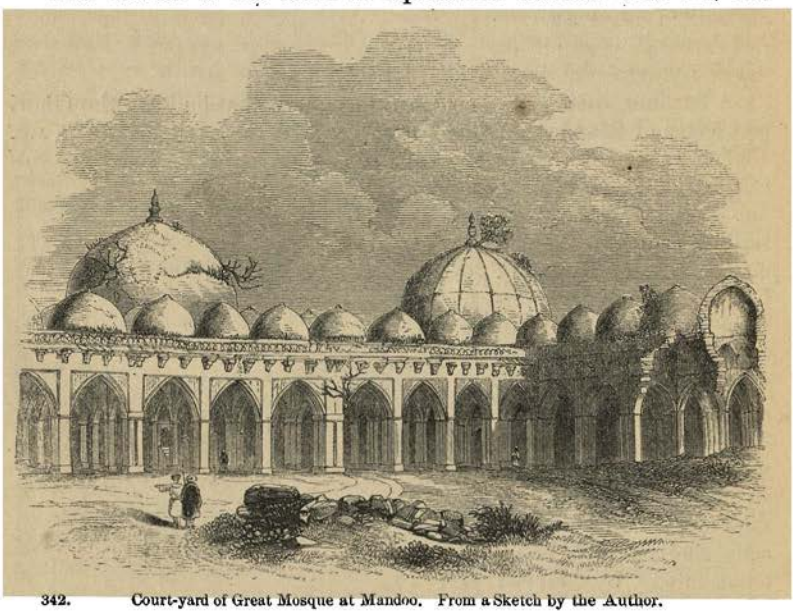
As will be seen in the plan (woodcut No. 341), these large domes

[1] These particulars are taken principally from Buchanan Hamilton's Statistics of Dinajepore, published by Montgomery Martin in 'Eastern India.'

[2] P. 98 *et seqq.*

are supported each by twelve pillars. The pillars are all equally spaced, the architect having omitted, for the sake of uniformity, to widen the central avenues on the intersection of which the domes stand. It follows from this that the four sides of the octagon supporting the dome, which are parallel to the sides of the court, are shorter than the four diagonal sides. Internally this produces a very awkward appearance; but this could not have been avoided except by running into another difficulty,—that of having oblong spaces at the intersections of the wider aisles with the narrower, to which the smaller domes must have been fitted. Perhaps on the whole the architect took the less inconvenient course of the two.

The interior of the court is represented woodcut No. 342, and



342. Court-yard of Great Mosque at Mandoo. From a Sketch by the Author.

for simple grandeur and expression of power it may perhaps be taken as one of the very best specimens now to be found in India. It is, however, fast falling to decay, and a few years more may deprive it of most of that beauty with which it impressed me when I visited it in 1829.

Ahmedabad.

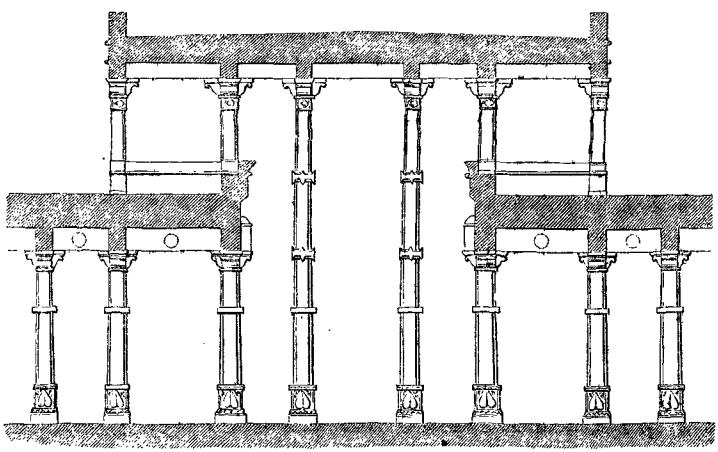
The city of Ahmedabad, the Moslem capital of Guzerat, is as rich in splendid mosques as Jaunpore or any of the provincial capitals of India, and their style is as distinctive of their locality as in any other instance in this country.

The town was built by Ahmed Shah, the second king of his race, who reigned from 1412 to 1443. He founded the great mosque, which for extent and beauty of detail seems to surpass everything of its class, even in India. In this instance the style is Jaina, and the archi-

tecture may be said to be that of the contemporary temple at Sadree (woodcuts Nos. 54, 55), with details borrowed from the still older temples at Abu (woodcut No. 44). This peculiarity arose not only from the locality, but also because the dynasty was originally of Hindu race, and clung to their own style and old feelings notwithstanding their conversion to Mahomedanism. The admixture of the elaborate and graceful forms of Jaina with the larger and taller proportions of Saracenic architecture makes this style as pleasing, if not more so, than any of the various forms the style takes in India.

All the Ahmedabad mosques are similar in design, and vary only in size. They consist of a courtyard surrounded on three sides by open colonnades, the fourth occupied by the mosque itself. This is entered from the court by three large doors, and is surmounted by three domes of somewhat flat outline externally, but internally as richly ornamented as any the Jains ever built.

These are invariably supported, like those of the Jains, on 8 pillars, made up to a square with 4 more, so that the smaller mosques have 36 pillars internally, the larger probably twice that number. In all instances the central compartment is raised considerably, and the light



343. Section of Mosque at Ahmedabad.

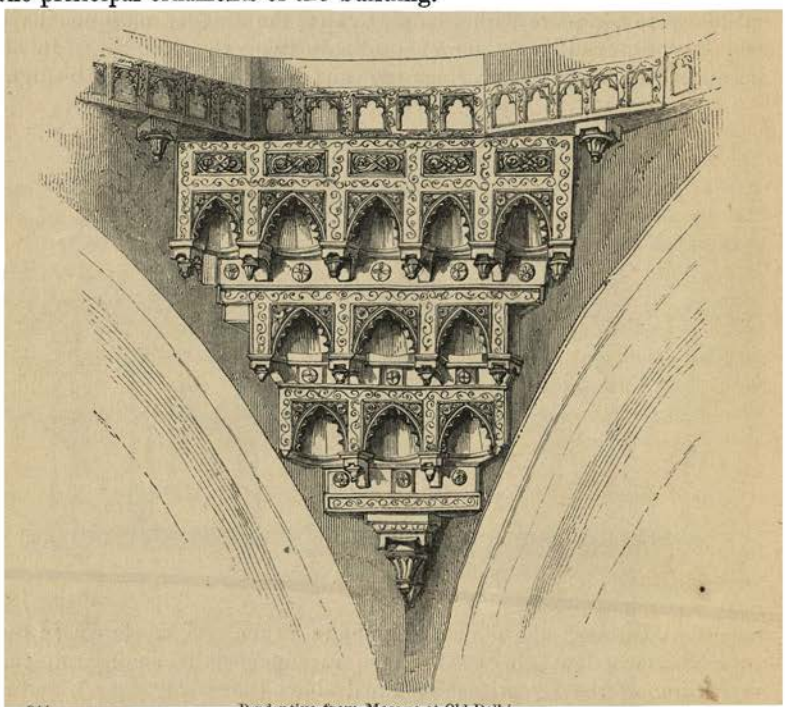
admitted through the double colonnade in the roof, as shown in the diagram (woodcut No. 343). This arrangement is similar to the hypethron of the Egyptians explained above (pages 230 *et seq.*), and is identical with that illustrated in woodcut No. 112 as having existed at Khorsabad.

The minarets of these mosques are attached to the central compartment, flanking each side of the principal entrance, and being of a bold Saracenic outline, covered with the richest and most elaborate Hindu carving, they are the most gorgeous things of their kind in India, though neither so graceful as those of Cairo nor so elegant as some at Agra and Delhi.

The Guzerat dynasty being of Hindu origin, has left no tombs worthy of notice. But their palaces, their bowlees, and generally their civic buildings, are as beautiful and as splendid as their mosques, but unfortunately as little known either from drawings or descriptions.

Delhi and Agra.

The older Pathan mosques at Delhi and its neighbourhood show the same peculiarities of simple uniformity of design, and number of small domes generally grouped around one or three larger ones. Before the conquests by the Moguls, however, this style had in a great measure been superseded by a more artistic and ornamental style of buildings. The body of the mosque became generally an oblong hall, covered by one central dome flanked by two others of the same horizontal dimensions, but not so lofty, and separated from the central dome by a broad bold arch, whose mouldings and decorations formed one of the principal ornaments of the building.

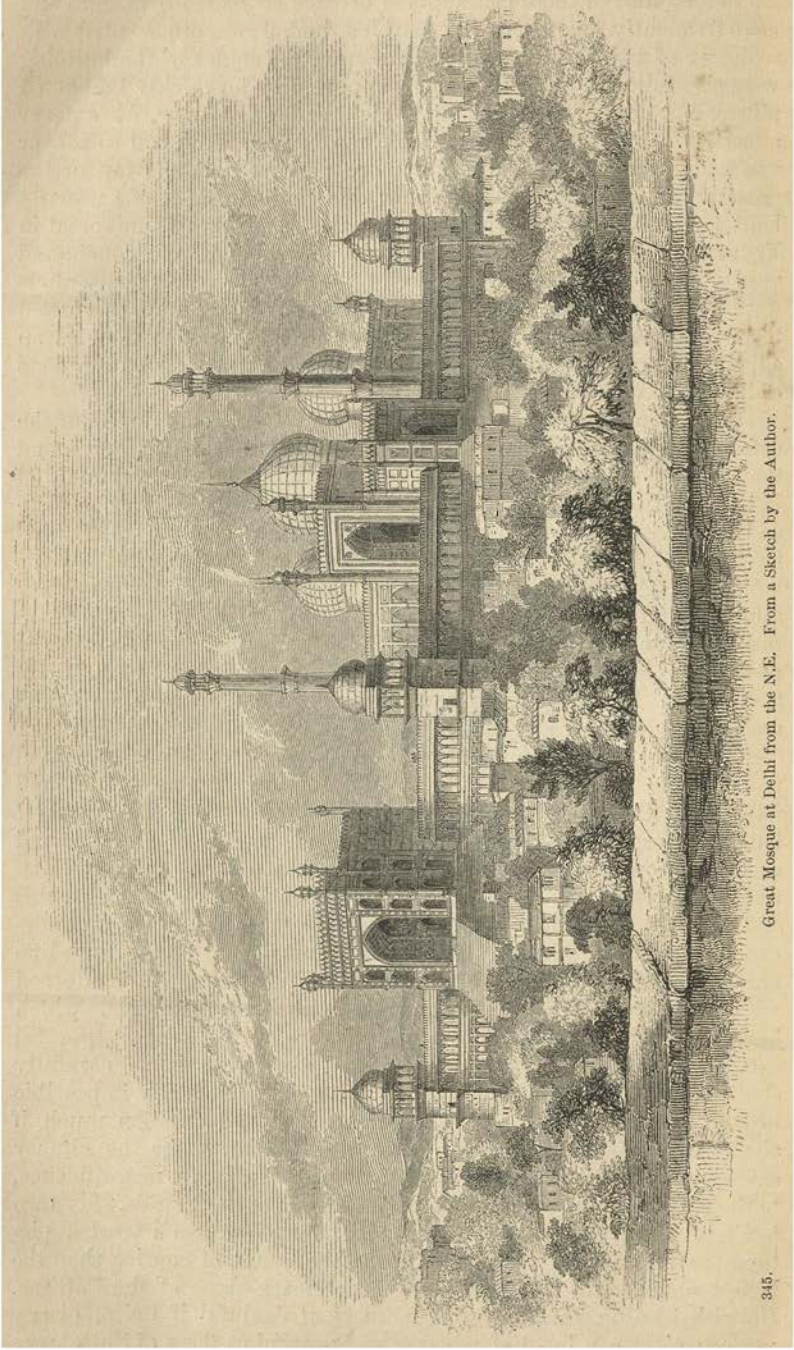


344. Pendentive from Mosque at Old Delhi.

The *pendentives* were even more remarkable than the arches for elaborateness of detail. Their forms are so various that it is impossible to classify or describe them; perhaps the most usual is that represented woodcut No. 344, where the angle is filled up with a number of small imitations of arches, bracketing one beyond the other. It was this form that afterwards was converted into the honeycomb work of the Arabs in Spain.

The façades of these mosques too became far more ornamental and more frequently encrusted with marbles, and always ornamented with sculpture of a rich and beautiful character; the angles of the building were also relieved by little kiosks, supported by four richly bracketed pillars, but never with minarets, which, so far as I know, were never attached to mosques during the Pathan period. The call to prayer was made from the roof, or at Jaunpore perhaps from the top of the great propylon; but I do not know one single instance of a minaret built for such a purpose, though they were, as we know, universal in Egypt and elsewhere long before this period, and were considered nearly indispensable in the works of the Moguls very shortly afterwards. They seem to have regarded the minar as the Italians viewed the *Campanile*, more as a symbol of power and of victory than as an adjunct to a church, which it became under the true Gothic architects of the North.

When the Moguls had established themselves on the throne of the defeated Pathans, in the early part of the 16th century, they found the style of architecture wholly emancipated from the trammels of Indian art, from which it had sprung, and forming in itself a complete and uniform system almost without any foreign admixture. In this form the style was adopted by Humayun, and characterises all his buildings. Akbar, his son, seems to have had a singular predilection for Hindus and Hinduisms, and nowhere did he show this more than in his buildings, which present the most picturesque assemblages possible of Mahometan forms and exigencies carried out with Hindu feeling and Hindu richness and elegance of design. His two next successors, Jehangir and Shah Jehan, wholly abandoned this peculiar style, which they seem to have regarded as a retrograde step, and pursued the more legitimate path of art, reforming its details and improving the elegance of their designs. By these means their buildings, especially their mosques, became models of elegance and also of appropriateness. The purpose of every part was fully and distinctly expressed, and with a fitness not often found elsewhere in this style. Thus the principal side of their mosques is always an independent building, generally covered by three domes, of the bulb-like form which these monarchs first introduced into India, and is adorned with minarets. The side colonnades with their gateways, which have again become important buildings, are always kept in graceful subordination to the western mass, and the whole is so carefully studied and so elegantly ornamented, that it is frequently impossible to suggest an improvement. But with all this, I question much if almost every artist and many architects would not prefer the clumsy splendour of the Pathans, with all their rude but manly magnificence, to the refined but somewhat emasculated grace of the Moguls. My own feeling is entirely with the former; and even Akbar's works, picturesque though they are, seem more the result of caprice than the honest endeavours to attain beauty that mark those of the Pathans. Notwithstanding this, it seems more than doubtful if Cairo, or any western city, can boast of mosques so beautiful as those of Futtehpore



345. Great Mosque at Delhi from the N.E. From a Sketch by the Author.

Sicri or those of the imperial cities Agra and Delhi. We have not yet, however, reached that point of knowledge of the style when comparative criticism is easy, or at least easily conveyed to others.

Perhaps the finest of these Mogul mosques is that built by Akbar at his favourite residence of Futtehpore Sicri, near Agra; but it cannot be considered so complete a type of the style as the Jumma Musjid, or great Mosque of Delhi, built by Shah Jehan on his removing the capital to its present site. Its appearance will be understood from the view on the opposite page, taken from one of the palace gates. It explains all the parts by which a mosque of this age was usually characterised,—the western part with its lofty centre, three domes, and two minarets, and the court-yard with its open colonnades, its towers at the angles, and three gateways, the eastern one being always more splendid than those on the north and south. The whole thus forms a group intelligible at the first glance, and as an architectural object possessing a variety of outline and play of light and shade which few buildings can equal.

The terrace on which this mosque is raised, as well as all the essential parts of it, are composed of fine red sandstone, but the principal façade is ornamented with panels and bands of white marble, and the interior is almost wholly composed of the same material.

The subordinate mosques have not all the parts here shown, nor of course are they on so large a scale; the general design, however, is in most cases similar, and, even when many parts are omitted, the remaining parts are so subdued and arranged that the completeness of the whole is not impaired.

By far the most elegant mosque of this age—perhaps indeed of any period of Moslem art—is the Mootee Mesjid, or Pearl mosque, built by Shah Jehan in the palace of Agra. Its dimensions are considerable, being externally 235 ft. east and west by 190 north and south, and the court-yard 155 ft. square.

Its mass is also considerable, as the whole is raised on a terrace of artificial construction, by the aid of which it stands well out from the surrounding buildings of the fort. Its beauty resides in its court-yard, which is wholly of white marble from the pavement to the summit of its domes. In design it somewhat resembles the great Delhi mosque represented in the last woodcut, except that the minarets are omitted, and in this example the side gateways are only recesses. The western part, or mosque properly so called, is of white marble inside and out, and, except an inscription from the Koran inlaid with black marble as a frieze, it has no ornament whatever beyond the lines of its own graceful architecture. It is, in fact, so far as I know, less ornamented than any other building of the same pretensions, forming a singular contrast with the late buildings of this style in Spain and elsewhere, which depend almost wholly for their effect on the rich exuberance of the ornament with which they are overlaid.

The bigoted Aurungzebe built many large and splendid mosques; but even in his day the style was visibly on the decline, and, though many gorgeous edifices of this class have since then been erected

at Oude, Hydrabad, and other Moslem capitals, their style is so degraded and corrupt, that they will not bear to be mentioned with those we have been describing. It will be needless, therefore, to attempt to recapitulate their names and dimensions. Accordingly we proceed to speak of the tombs and other works of their nobler predecessors, which it is necessary to describe to make up a complete picture of the style.

Tombs.

As has been frequently remarked in the previous pages of this work, the great architectural peculiarity of the Tartar or Mongolian races is their tomb-building propensity, in which they are so strongly distinguished from the Arian, and also from the great Semitic families, with whom they divide the greater part of the habitable globe. Nowhere is this more forcibly illustrated than in India—where the tombs of the Turks and Moguls form a complete and unbroken series of architectural monuments from the first years of the Moslem invasion to the present hour.

The tombs of the Turks or Pathans are less splendid than those of the Moguls; but nevertheless the whole series is singularly interesting, the tombs being far more numerous than the mosques. Generally speaking, also, they are more artistic in design, and frequently not only larger but more splendidly decorated than the buildings exclusively devoted to prayer.

The princes of the Tartar races, in carrying out their love of tombs, made it their practice to build their own in their lifetime. In doing this they rejected the Egyptian mode of preparing dark and deep chambers in the heart of the rock, or of the massive pyramid. The Tartars, on the other hand, built their sepulchres of such a character as to serve for places of enjoyment for themselves and their friends during their lifetime, and only when they could enjoy them no longer they became the solemn resting-places of their mortal remains.

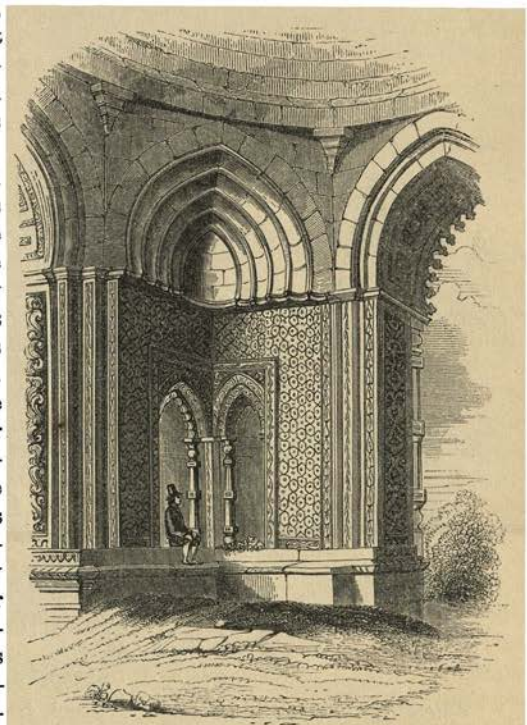
The usual process for the erection of these structures is for the king or noble who intends to provide himself a tomb to enclose a garden outside the city walls, generally with high crenellated walls, and with one or more splendid gateways; and in the centre of this he erects a square or octagonal building, crowned by a dome, and in the more splendid examples with smaller and dome-roofed apartments on four of the sides or angles, the other four being devoted to entrances. This building is generally situated on a lofty square terrace, from which radiate four broad alleys, generally with marble-paved canals ornamented with fountains; the angular spaces are planted with cypresses and other evergreens and fruit trees, making up one of those formal but beautiful gardens so characteristic of the East. During the lifetime of the founder, the central building is called a Barrah Durrie, or festal hall, and is so used as a place of recreation and feasting by him and his friends.

At his death its destination is changed,—the founder's remains are interred beneath the central dome. Sometimes his favourite wife lies

beside him; but more generally his family and relations are buried beneath the collateral domes. When once used as a place of burial, its vaults never again resound with festive mirth. The care of the building is handed over to priests and cadims, who gain a scanty subsistence by the sale of the fruits of the garden, or the alms of those who come to visit the last resting-place of their friend or master. Perfect silence now takes the place of festivity and mirth. The beauty of the surrounding objects combines with the repose of the place to produce an effect as graceful as it is solemn and appropriate.

Though the tombs, with the remains of their enclosures, are so numerous throughout all India, the Taje Mehal, at Agra, is almost the only one that retains its garden in anything like its pristine beauty, and there is not perhaps in the whole world a scene where nature and art so successfully combine to produce a perfect work of art as within the precincts of this far-famed mausoleum.

The oldest authentic tomb in India is that built for himself by Altumsh, behind the great range of arches of the Kootub, as shown in the plan (woodcut No. 335). Though small, its workmanship is, like that of the mosque itself, of exquisite beauty; but either it was left unfinished, or has been subsequently ruined, as it has now no roof.

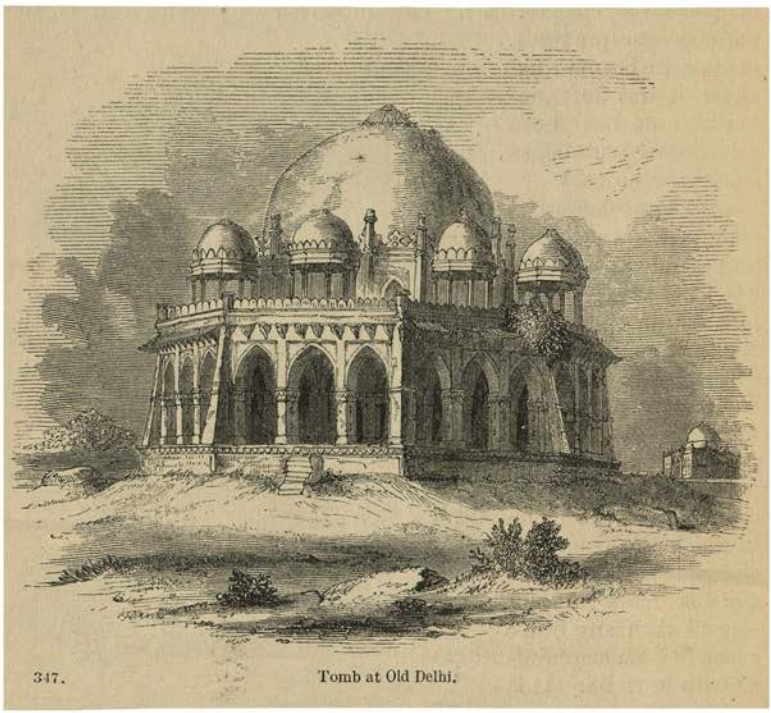


346. Pendentive in Tomb at Old Delhi.

A more beautiful tomb than even this is the other, shown on the left hand of the same plan; at least a century more modern, though its date and the name of its founder are unknown. Its walls internally are decorated with a diaper pattern of unrivalled excellence, and the mode in which the square is changed into an octagon is more simply elegant than any other example I am acquainted with in India. It is earlier than the *pendentive* shown in the woodcut No. 344; but the two may be taken as favourable specimens, this one of the simple, the other of the more ornate mode of effecting the change of form necessary to place a circular dome on a square apartment. Both these forms are much more

beautiful than the usual honeycomb work of the later Spanish Arabs, or even than the pendentives in the mosque of Hassan at Cairo. The only foreign rival they have, so far as I know, is that of the tomb at Sultanieh, illustrated above (woodcut No. 328). It would require a volume to illustrate this one feature of Indian art alone, no two spandrils being alike, and the architects seeming to have exhausted almost every conceivable form in their endeavour to render this indispensable feature as ornate as possible.

The usual form of a Pathan tomb will be better understood from the following woodcut (No. 347), representing a nameless sepulchre among the hundreds that still strew the plains of Old Delhi. It consists of one octagonal apartment, about 50 ft. in diameter, surrounded by a verandah following the same form, each face being ornamented by 3 arches of the stilted shape almost always adopted by the Pathans, supported by double square columns, which are almost as universal with them as the form of arch. It is evidently a reminiscence of the Hindu art from which their style sprang.



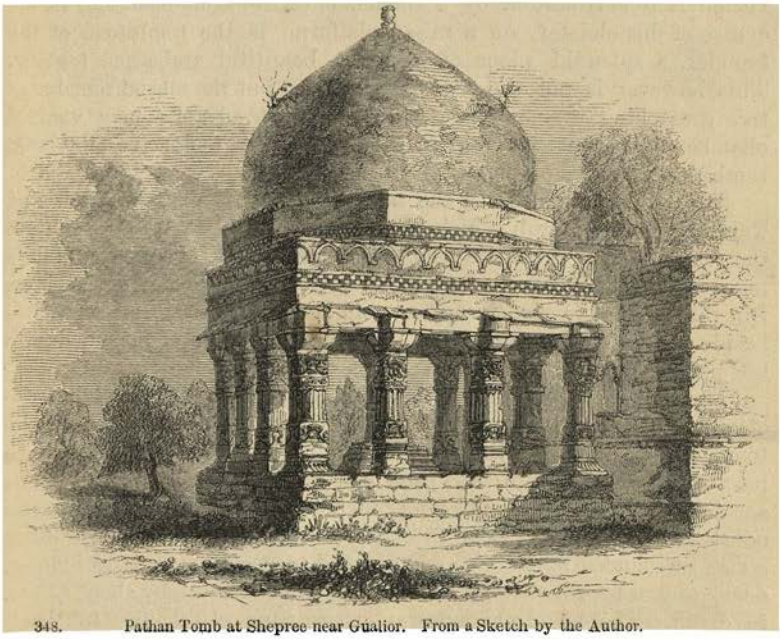
347. Tomb at Old Delhi.

When that stern old warrior, Togluck Shah (1321), founded the new Delhi, which still bears his name, he built himself a tomb, not in a garden, but in a strongly fortified citadel in the middle of an artificial lake. The sloping walls and almost Egyptian solidity of this mausoleum, combined with the bold and massive towers of the fortification that surround it, form a picture of a warrior's tomb unrivalled any-

where, and a singular contrast with the elegant and luxuriant garden tombs of the more settled and peaceful dynasties that succeeded.

The tomb of Sher Shah, the last of the Pathans, is situated in the middle of an artificial tank at Sasseram, near Benares, and is one of the largest, though certainly not the best, of the Pathan tombs. In design it is very similar to that represented in woodcut No. 347, but the central apartment is an octagon 100 ft. in diameter. It stands too on a massive square terrace, each angle of which is ornamented with an octagonal kiosk, and the various smaller pavilions and kiosks make up an architectural object of great beauty and picturesqueness of effect.

As a general rule, the Pathan tombs are complete examples of the Saracenic style, and show but slight traces of Hindu design. But this was not always the case; and, as in their earlier mosques, they sometimes appropriated the remains of Jaina architecture to save themselves the trouble of erecting the whole building from original materials. Frequently these compound edifices are composed of only 4 pillars supporting a small dome; but more generally, as in that represented woodcut No. 348, of 12, arranged as the Jaina domes usually are,[1] consisting of an octagon worked out to a square, and supporting a dome of slightly pointed form.



348. Pathan Tomb at Shepree near Gualior. From a Sketch by the Author.

As will be remarked, the tomb is almost an exact counterpart in design with that at Halicarnassus (woodcut No. 292), showing a

[1] See p. 72 *et seqq.*

curious persistence in the use of this arrangement, though it must be confessed it is one of the most beautiful ever invented.

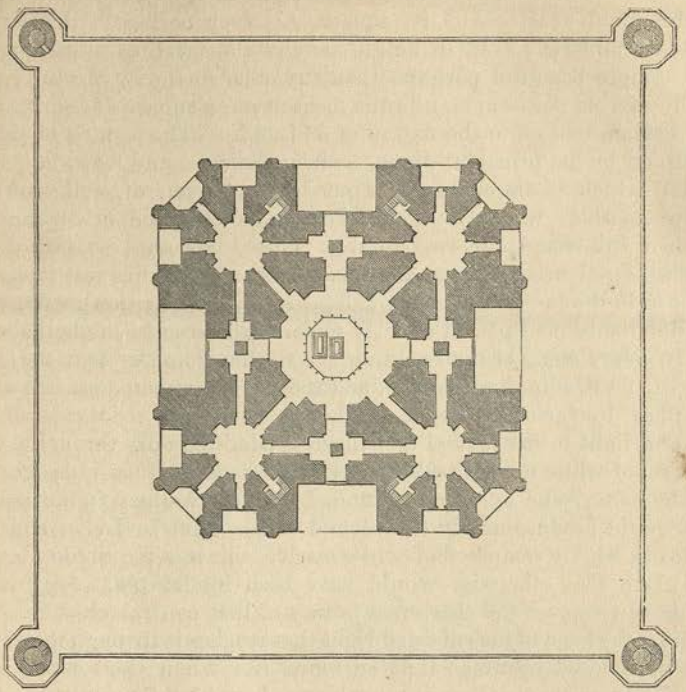
At first sight the upper part of the building looks somewhat too massive for the substructure; but its destination as a tomb renders this appropriate, and was apparently intended by the architect to produce that solemnity which the closed walls impart to the ordinary forms of sepulchres.

The tomb of Humayun Shah, the first of the Moguls who was buried in India, still stands tolerably entire among the ruins of Old Delhi, of which indeed it forms the principal and most striking object. That of Akbar, at Secundra, near Delhi, is, like all his buildings and doings, exceptional, and unlike those of any of his race; but still of great magnificence. The latter tomb is pyramidal in external form. The outer or lower terrace is 320 ft. square by 30 in height, and its architecture is bold and massive. On this terrace stands another far more ornate, measuring 186 ft. on each side, and 14 ft. 9 in. in height. A third and a fourth of similar design, and respectively 15 ft. 2 in. and 14 ft. 6 in. high, stand on this, all these being of red sandstone. Within and above the last is a white marble enclosure, 157 ft. each way, or externally just half the length of the lowest terrace; the outer wall of this is entirely composed of marble trellis-work of the most beautiful patterns. Inside it is surrounded by a colonnade of the same material; in the centre of this cloister, on a raised platform, is the tombstone of the founder, a splendid piece of the most beautiful arabesque tracery. This however is not the true burial-place; but the mortal remains of this great king repose under a far plainer tombstone in a vaulted chamber in the basement 35 ft. square, exactly under the simulated tomb that adorns the summit of the mausoleum.

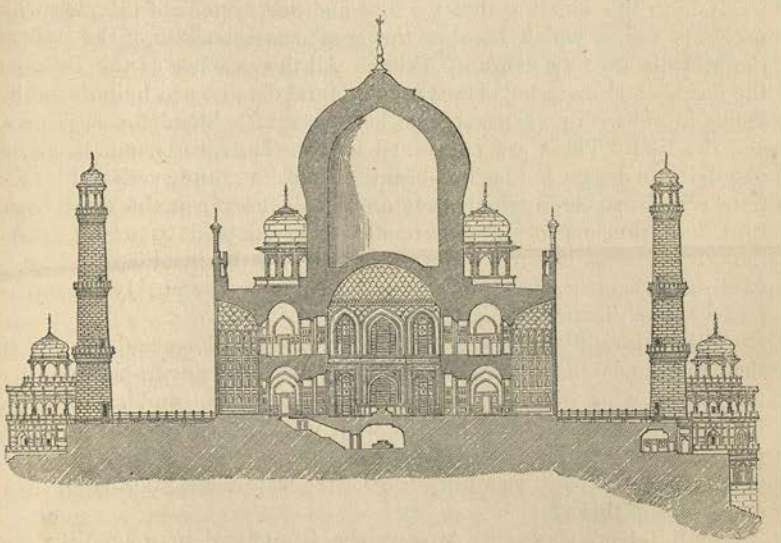
The typical example of the tombs of this race is the celebrated Taje Mehal—the tomb which Shah Jehan erected at Agra, to contain the remains of his favourite wife, Moomtaza Mehal, meaning to erect a more splendid mausoleum for himself on the opposite side of the river. But this was not carried into effect, and he rests in this same sepulchre beside his wife, she occupying the centre, a place of honour due to her precedence in the race of death.

The plan and section (woodcuts No. 349 and No. 350) explain sufficiently the general arrangement and structural peculiarities of the tomb or principal building of the group. This is, however, only a part of the whole design, and cannot be judged of by itself without its accompaniments. The enclosure, including the gardens and outer court, is a parallelogram of 1860 ft. by more than 1000.[1] The outer court, surrounded by arcades and adorned by 4 gateways, is an oblong, occupying in length the whole breadth of the enclosure by about 450 ft. in depth. The principal gateway, measuring 110 ft. by 140, leads from the court to the gardens, which, with their marble canals and fountains and cypress-trees, are almost as beautiful as the tomb itself.

[1] The section has been engraved to a small scale of rather more than 100 ft. to 1 in. in order to bring it into the page.



349. Plan of Taje Mehal, Agra. From a plan by the Author. Scale 100 ft. to 1 in.



350. Section of Taje Mehal, Agra.

The tomb stands on a raised platform 18 ft. high, faced with white marble, and exactly 313 ft. square. At each corner of this terrace stands a minaret 133 ft. in height, and of the most exquisite proportions, more beautiful perhaps than any other in India. In the centre of the marble platform stands the mausoleum, a square of 186 ft., with the corners cut off to the extent of 33 ft. 9 in. The centre of this is occupied by the principal dome, 58 ft. in diameter and 80 ft. in height, under which is an enclosure formed by a screen of trellis-work of white marble, which is a chef-d'œuvre of elegance in Indian art. Within this stand the two tombs. These, however, as is usual in Indian sepulchres, are not the true tombs,—the bodies rest in a vault level with the surface of the ground (as seen in the section) beneath the plainer tombstones placed exactly underneath those in the hall above.

In every angle of the building is a smaller dome of two stories in height, 26 ft. 8 in. in diameter, and these are connected, as shown in the plan, by various passages and halls.

The light to the central apartment is admitted only through double screens of white marble trellis-work of the most exquisite design, one on the outer, and one on the inner face of the walls. In our climate this would produce nearly complete darkness; but in India, and in a building wholly composed of white marble, this was required to temper the glare that otherwise would have been intolerable. As it is, no words can express the chastened beauty of that central chamber, seen in the soft gloom of the subdued light that reaches it through the distant and half-closed openings that surround it. When used as a Barrah Durrie, or pleasure palace, it must always have been the coolest and the loveliest of garden retreats; and now that it is sacred to the dead, it is the most graceful and the most impressive of the sepulchres of the world.

It is in this building that we first find that system of inlaying with precious stones which became the great characteristic of the style of the Moguls after the death of Akbar. All the *spandrils* of the Taje, all the angles and more important architectural details, are heightened by being inlaid with precious stones, such as agates, bloodstones, jaspers, and the like. These are combined in wreaths, scrolls, and frets, as exquisite in design as they are beautiful in colour, and, relieved by the pure white marble in which they are inlaid, they form the most beautiful and precious style of ornament ever adopted in architecture: though of course it is not to be compared with the intellectual beauty of Greek ornament, it certainly stands first among the purely decorative forms of architectural design.

This is lavishly bestowed on the tombs themselves and the screen that surrounds them, and is sparingly introduced on the mosque that forms one wing of the Taje, and on the fountains and surrounding buildings. The judgment indeed with which this style of ornament is apportioned to the various parts is almost as remarkable as the ornament itself, and conveys a high idea of the taste and skill of the Indian architects of this age.

Shah Jehan's successor, Aurungzebe, lies buried in a small hamlet just above the caves of Ellora. The spot is esteemed sacred, but the

tomb is mean and insignificant beyond what would have sufficed for any of his nobles. He neglected, apparently, to provide for himself this necessary adjunct to a Tartar's glory, and his successors were too weak, even if they had been inclined, to supply the omission. Strange to say, the sacred Tulsee-tree of the Hindus has taken root in a crevice of the brickwork, and is flourishing there as if in derision of the most bigoted persecutor the Hindus ever experienced.

In addition to these Imperial tombs, the neighbourhoods of Agra and Delhi are crowded with the tombs of the nobles of the court, some of them scarcely less magnificent than those of their masters. Among these, one erected by Etty mad doulah, the minister of Akbar, for himself, is one of the most splendid in elaboration, though far from being the most graceful in design. The whole is of white marble, and inlaid with precious stones in various patterns to a greater extent than even the Taje, or perhaps than any other building in India.

Besides these tombs, however, in the capital of the empire, there is scarcely a city of any importance in the whole course of the Ganges or Jumna, even as far eastward as Dacca, that does not possess some specimen of this form of architectural magnificence. Jaunpore and Allahabad are particularly rich in examples; but Patna and Dacca possess two of the most pleasing of the smaller class of tombs that are to be met with anywhere.

The tombs of the kings of Golconda are almost as well known by repute as their diamond-mines—and certainly form a splendid group of mausolea, but by no means equal in taste or grandeur to the examples we have been alluding to.

Mandoo also is rich; its finest example being that of Hoshang Shah, who built the great mosque immediately behind which it stands. It is of white marble both inside and out, and possesses all the solidity and grandeur of Pathan design, coupled with considerable beauty of form, and an appearance of elegance derived from the material of which it is composed.

Near Aurungabad is one built by Aurungzebe in honour of his first wife, and said then to have been an exact copy of the celebrated Taje Mehal, an assertion that has been often repeated since. The general arrangement of the body of the building and its 4 minarets is, it is true, the same; but every detail is different, and the general degradation of style in so short a period is one of the most remarkable phenomena in the history of art in the East. Something may be allowed for its being a provincial building; but with all this, it is difficult to understand how anything so tasteless, though so rich, could be erected by the immediate successor of that king who built the beautiful tomb to which it has been unworthily compared.

BEEJAPORE.

The now deserted city of Beejapore[1] is one of the most remarkable among the ruined capitals of the Mahometan dynasties of India. It is

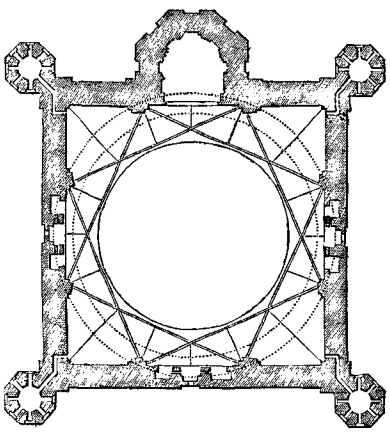
[1] Situated in the Deccan, about 250 miles south-east from Bombay.

true it neither possesses anything so elegant as the white marble buildings of Agra and Delhi, nor so elaborate as the mosques of Ahmedabad; but it is unsurpassed from the scale of some of its edifices, and remarkable for the largeness and grandeur of design which characterise all of them.

The city was founded by Yusuph Khan, a son of Amurath II. of Anatolia. The first three kings did little that was remarkable; but on the defeat of the celebrated Ramraj of Vyjyanuggar, in 1564, the dynasty rose to great wealth and power, and, during the century which elapsed from that time till they fell under the sway of the tyrant Aurungzebe, they adorned their capital with many remarkable and sumptuous edifices.

As might be expected from their Tartar descent, the principal of these were their tombs; and that of Mahomet, who reigned from 1626 to 1660, is not only the largest ever built by a Saracenic architect, but perhaps the very boldest and largest domical edifice now known to exist anywhere.

As will be seen from the plan (woodcut No. 351), it is a plain square apartment, 135 ft. each way; its area consequently is 18,225 square ft., while that of the Pantheon at Rome is, within the walls, only 15,833; and even taking into account all the recesses in the walls of both buildings, this is still the larger of the two.



351. Plan of Tomb of Mahomet at Beejapore. Scale 100 ft. to 1 in.

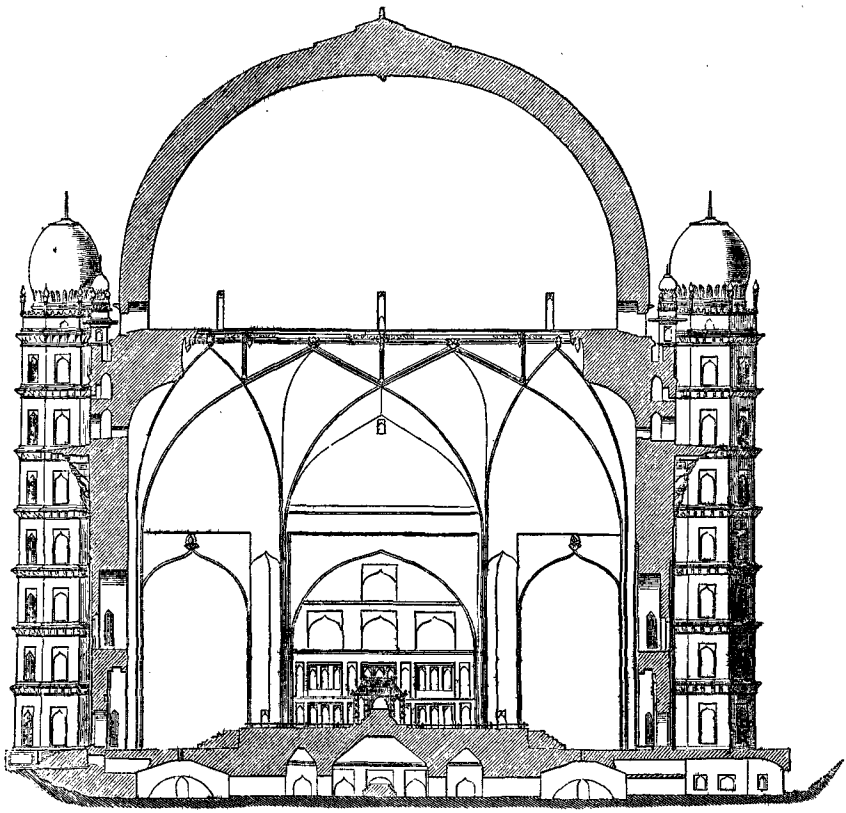
At the height of 57 ft. from the floor-line the hall begins to contract, by a series of pendentives as ingenious as beautiful, to a circular opening 97 ft. in diameter. The dome is erected on the platform of these pendentives, 124 ft. in diameter, thus leaving a gallery more than 12 ft. wide all round the interior. Internally, the dome is 175 ft. high, externally 198, its general thickness being about 10 ft.

The most ingenious and novel part of the construction of this dome is the mode in which its lateral or outward thrust is counteracted. This was accomplished by forming the pendentives so that they not only cut off the angles, but, as shown in the plan, their arches intersect one another, forming a very considerable mass of masonry perfectly stable in itself, and, by its weight acting inwards, counteracting any thrust that can possibly be brought to bear upon it by the pressure of the dome. If the whole edifice thus balanced has any tendency to move, it is to fall inwards, which from its circular form is impossible; but the action of the weight of the pendentive being in the opposite direction to that of the dome, it acts like a tie and keeps the whole in

equilibrium, and that without interfering at all with the outline of the dome.

In the Pantheon and most European domes a great mass of masonry is thrown on the haunches, entirely hiding the external form, and is a singularly clumsy expedient in every respect compared with the elegant mode of hanging the weight inside.

Notwithstanding that this expedient gives the dome a perfectly stable basis to stand upon, which no thrust can move, still, looking at the section (woodcut No. 352), its form is such that it appears almost

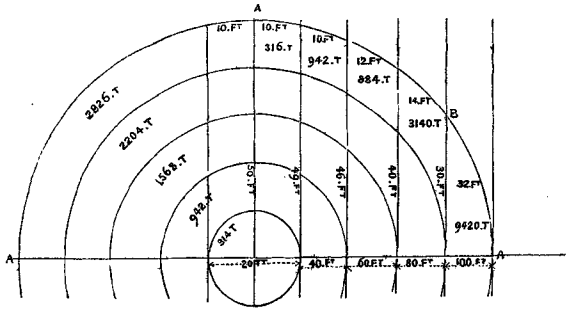


352. Section of Tomb of Mahomet at Beejapore. Scale 50 ft. to 1 in.

paradoxical that such a building should stand. If the section represented an arch or a vault, it is such as would not stand one hour; but the dome is in itself so perfect as a constructive expedient, that it is almost as difficult to build a dome that will fall as it is to build a vault that will stand. As it is besides the most beautiful form of roof artistically that has yet been invented, it may be well, before passing from the most extraordinary and difficult example yet attempted anywhere, to pause and examine a little more closely the theory of the dome.

Let us suppose the diagram (woodcut No. 353) to represent a perfectly flat dome 100 ft. in diameter, and each rim consequently 10 ft. wide.

Supposing further that the whole dome weighs 7850 tons, or any other weight, the outer rim will weigh 2826 tons, or almost exactly as much as the three inner rims put together; the next will weigh 2204, the next 1568, the next 942, and the inner only 314; so that a considerable extra thickness might be heaped on it, or on the two inner ones, without their preponderance at all affecting the stability of the dome; but this is the most unfavourable view to take of the case. To understand the case more clearly, let us suppose the semicircle A A A to represent the section of a hemispherical dome. The first segment of this, though only 10 ft. in width, will be 30 in height, and will weigh 9420 tons; the next, 10 ft. high and 10 wide, will weigh 3140; the third, 10 ft. by 6, will weigh only 1884; the fourth will weigh 942; and the central portion, as before, 316.



353. Diagram illustrative of Domical Construction.

Now it is evident that the first portion, A B, being the most perpendicular, is the one least liable to disturbance or thrust, and, being also two-thirds of the whole weight of the dome, if it is steady and firmly constructed it is a more than sufficient abutment for the remaining third, which is the whole of the rest of the dome.

It is evident from an inspection of the figure, or from any section of a dome, how easy it must be to construct the first segment from the springing; and if this is very solidly built and placed on an immoveable basis, the architect may play with the rest; and he must be clumsy indeed if he cannot make it perfectly stable. In the East they did play with their domes, and made them of all sorts of fantastic forms, seeking to please the eye more than to consult the engineering necessities of the case, and it is the rarest possible contingency to find a dome that has fallen through faults in the construction.

In Europe architects have been timid and unskilled in dome-building; but with our present engineering knowledge it would be easy to construct far larger and more daring domes than even this of Mahomet's tomb, without the smallest fear of accident.

The external ordinance of this building is as beautiful as that of the interior. At each angle stands an octagonal tower eight stories high,

simple and bold in its proportions, and crowned by a dome of great elegance. The lower part of the building is plain and solid, pierced only with such openings as are requisite to admit light and air; at the height of 83 ft. a cornice projects to the extent of 12 ft. from the wall, or nearly twice as much as the boldest European architect ever attempted. Above this an open gallery gives lightness and finish to the whole, each face being further relieved by two small minarets.

The tomb of the predecessor of this king, Ibrâhim II. (A.D. 1579 to 1629), though smaller, almost makes up by the beauty of its details what it wants in dimensions as compared with its great rival; it is only 116 ft. square by 114 in height. Its central apartment is only 40 ft. each way by 35 in height, and almost wholly devoid of ornament. It is surrounded externally by a double verandah, every inch of which is covered with the most elaborate carvings, either of architectural details or ornamental writing, so extensive indeed, that it is said the whole Koran is sculptured on its walls.

Both these were to have been surpassed by that of Ally Adel Shah, the last king of his race; he did not however reign long enough to raise it above the first tier of arches, and it is now only an elegant ruin.

The great mosque of the city is worthy of its tombs, being 258 ft. wide by 144 in depth, divided into five aisles, on the centre of which rises a beautiful dome, 75 ft. in diameter. Beyond this building two wings project at right angles, so that with the mosque they enclose three sides of a court-yard about 190 ft. square: the fourth side was unfinished when the city fell under the sway of Aurungzebe.

Besides these buildings there are seven palaces or *mehals* within the citadel, and one very large and remarkable one, called the Ashur Moobaruck, just outside its ditch. Within the city there are numberless residences of the nobles and attendants of the court. One called, from a whimsical legend, the Methur's or sweeper's dwelling, is, though small, as rich a specimen of elaborate Hindu workmanship as is to be found anywhere in India.

The gigantic walls of the city itself, 6½ miles in circumference, are a work of no mean magnitude, and, standing in front of the tombs of those who built them, and among the ruins of the suburbs of this once great city, they make up a scene of grandeur in desolation equal to anything else now found even in India.[1]

The mausoleum of Hyder Ali, at Seringapatam, is one of the specimens of its class oftenest engraved, and consequently best known to the English public. It is an imposing specimen of the style in its decay; but wanting both in the grandeur and beauty of ornament which characterise those examples we have been speaking of.

In a history of Indian mausolea, however, it should not be omitted, as it is, and probably will remain, the last specimen of its class. For

[1] The woodcuts and dimensions, &c., quoted above, are taken from a splendid set of drawings of these buildings, executed under the superintendence of Captain Hart, Bombay Engineers, and now deposited in the India House. They are by far the most beautiful and correct drawings which have ever reached this country from India.

there is now in India no Moslem monarch with means sufficient to attempt an erection of this kind, and, if such an attempt were made, it probably would be adorned with Italian details in the worst possible taste, and be more an emblem of the utter degradation of the race than a monument capable of conveying to posterity an idea of their greatness or power.

Palaces.

It is true, perhaps, that in India the most characteristic form of Moslem art is that found in the tombs just described; but at the same time it must be admitted that Saracenic architecture in general is most distinctively represented by its palaces. It was for the display of luxurious splendour that the taste of the people was best suited, and it is consequently in the style displayed in their palaces that they can best lay claim to pre-eminence, if they possessed it anywhere. None of the races who have at any period embraced the religion of Mahomet were capable of such a sustained effort of religious enthusiasm as that which gave rise to the Gothic art. Neither did they ever attain that permanent durability which gives to the Egyptian monuments such an expression of eternity; nor did they at any time possess the perception of intellectual beauty which at Athens produced the Parthenon. Their characteristic was more that of elegant and luxurious refinement. Their taste led them to splendour—to gorgeous pomp and ceremonial—rather than to those higher feelings which dignify the works of Western nations. Vulgar they never were, for vulgarity is unknown in the East, while a sense of the picturesque seems an inherent quality of the Asiatic mind—qualities which, combined with an almost feminine delicacy of expression, were admirably adapted to produce an exquisite style of palatial art; but one that could never reach either to sublimity, or to the manlier and nobler, though perhaps less refined, styles of Western Europe.

Very little now remains of the palaces built by the Pathans in India. The finest, and perhaps the best of these, was that built at Agra by Sher Shah, whose tomb at Sasseram is described above. It certainly belonged to the best age; and being built to adorn the newly established capital, had probably all the art lavished upon it which that age afforded. Being the first, it had the misfortune to be placed on the highest spot within the walls of the fortress. Hence the present enlightened government of India, fancying this a good site for a barrack, pulled it down, and replaced it by a more than usually hideous brick erection of their own. This is now a storehouse, and looms in whitewashed ugliness over the marble palaces of the Moguls, a fit standard of comparison of the taste of the two races.

Judging from a fragment that remains, and the accounts received on the spot, this palace must have gone far to justify the eulogium that has more than once been passed on the works of these Pathans—that "they built like giants, and finished like goldsmiths:" the stones seem to have been of the most enormous size, and the details of most exquisite finish. It has passed away, however, like many another

noble building of its class, under the ruthless barbarism of our rule. Mosques we have generally spared, and sometimes tombs, because they were unsuited to our economic purposes, and it would not answer to offend the religious feelings of the natives. But when we deposed the kings and appropriated their revenues, there was no one to claim these now useless abodes of splendour. And as it was found cheaper either to pull them down, or use them as residences or arsenals, than to keep them up, few, very few, remain for the admiration of posterity.

At Mandoo there are some noble remains of the palace, designed with the same simple grandeur which characterises the mosque (woodcut No. 342), but built on even a more massive and gigantic scale. At Beejapore the palaces are nearly entire, though of a later age; and considerable fragments still exist of the old palaces of Jaunpore, Gaur, and the older capitals of the race. Delhi too is full of fragments; but nothing is so entire as to merit now the name of a palace, or which would enable us to restore their arrangement in anything like completeness.

The troubled reign of Humayun does not seem to have been favourable to palace-building, at least on a permanent scale, though we learn from Ferishtah that he erected a great palace containing 7 halls of audience, each dedicated to one of the 7 planets; and that he gave public audience in each of these according to the planet of the day. The building seems to have been splendid; but it may have been composed of ephemeral materials.

Akbar, however, was one of the greatest builders of his race, and left few of his capitals—except perhaps Delhi—without some fit monument of his greatness. His buildings are all very similar to one another in style, but very unlike those either before or after his time. They do not possess the elaborate minuteness of the Hindus, nor the giant strength of the Pathans; still less do they show the refined elegance of the works executed under Shah Jehan; but they unite all these different qualities into one style in a manner that is very remarkable, standing as it were between two ages, and combining the feelings of two religions in a way that is not only very instructive, but produces a style unrivalled by anything of its kind in any part of the world.

Akbar's favourite and principal residence was at Futtehpore Sicri, near Agra, where he built the great mosque mentioned above, and in its immediate proximity erected a palace, or rather a group of palaces, which in their way are more interesting than any other in India. No general design seems to have been followed in their erection; but pavilion after pavilion was added, and residences either for himself or for his favourite wives. These were built as the taste of the moment dictated, some in the Hindu, some in the Moslem style. The palace has no pretension to be regarded as one great architectural object; but as a picturesque group of elegant buildings it is unrivalled. All are built of the red sandstone of the hill on which the palace stands; no marble is used, and no stucco either inside or out, all the ornaments being honestly carved in relief on the stone, and the roofs as well as the floors all of the same material, and characterised by that singular

Hindu-like aversion to an arch which Akbar alone of all the Moslem monarchs seems to have adopted.[1]

His palace at Agra is merely one pavilion, or rather *corps de logis*, and cannot therefore be compared with the great palace in size; but it is singularly elegant in detail, and, having escaped the fate of so many of the palaces of India, time has only softened without destroying the beauty of its features. Internally it encloses a court 71 ft. 2 in. square, one side of which is occupied by a hall 62 ft. 8 in. by 35 ft. 3 in., of almost purely Hindu design, and almost as elaborate and elegant in detail. In the opposite side of the court is a smaller hall. The two remaining sides are occupied by two entrances with porches and halls. Beyond this an open court overlooks the river and the country on the other side of the Jumna. Like all his buildings, this is of red sandstone ornamented in relief, and generally without arches, thus forming a singular contrast to the marble halls of Shah Jehan, which adjoin it.

Allahabad was a more favourite residence of this monarch than Agra, perhaps even more than Futtehpore Sicri; but the English having appropriated the fort, its glories have been nearly obliterated. The most beautiful thing was the pavilion of the Chalees Sitoon, or 40 pillars, so called from its having that number on the principal floor, disposed in two concentric octagonal ranges, one internal of 16 pillars, the other outside of 24. Above this, supported by the inner colonnade, was an upper range of the same number of pillars crowned by a dome. This building has entirely disappeared, its materials being wanted to repair the fortifications. The great hall, however, still remains, represented in the annexed woodcut (No. 354). It is

354. Hall in Palace at Allahabad. From a drawing by Daniell.

[1] How much of this palace now remains it is impossible to say. When I was there the Government were selling the stones at 10 rupees the hundred maunds—a little less than it would cost to quarry them. I saw one of the noblest bowlees being so destroyed by the Company's servants, and its materials being carted away to build the wretched Barree of a neighbouring Zemindar. 200*l.* or 300*l.* might thus be added to a revenue of 22 millions, which, thanks to these Moguls, we are able to wring from the poorest peasantry in the world.

now the arsenal; a brick wall has been run up between its outer colonnades with windows of English architecture, and its curious pavilions and other accompaniments removed; and internally, whatever could not be conveniently cut away is carefully covered up with plaster and whitewash, and hid by stands of arms and deal fittings. Still its plan can be made out; a square hall supported by eight rows of columns, eight in each row, thus making in all sixty-four, surrounded by a deep verandah of double columns with groups of four at the angles, all surmounted by bracket capitals of the most elegant and richest design, and altogether as fine in style and as rich in ornament as anything in India.

None of the Emperors of India built less or cared less for building than Akbar's son and successor Jehangir, who has not left in India Proper one single edifice worthy either of his power or the length of his reign. The only works which he left seem to have been at Lahore, where he lies buried with his imperious queen, the celebrated Noorjehan.

Shah Jehan, however, who succeeded him in 1628, made ample amends for this neglect, having built more than any of his race except perhaps the great Akbar. It is startling to find how complete a change of style had been effected in the short interval that had intervened between these two reigns. The truth seems to be that the current of Moslem art had advanced steadily from the beginning. Under Akbar an interruption took place, attributable to the bold originality and peculiarity of taste of that great monarch. On his death the Mahometan style resumed its course, but made little progress under his feeble successor. On the accession of Shah Jehan it again flourished in all its magnificence. It was this king who built the present city of Delhi, with its great mosques and palaces, the latter being the most perfect and complete example of its style in India, having besides hitherto escaped the spoiling hand of the English, being still inhabited by the fainéant kings of the Mogul race. From this cause this palace is not so easily accessible to Europeans, and consequently not so well known, as that of Agra. Besides that, it is altogether of a somewhat later age, many of its buildings having been finished, and some added, by Aurungzebe, and tinctured by the decline of art that became apparent during his reign. The palace at Agra, though smaller and less complete, is perhaps even more interesting, being wholly of the best age. In the centre of it is a great court, 500 ft. by 370, surrounded by arcades, and approached at the opposite ends through a succession of beautiful courts opening into one another by gateways of great magnificence. On one side of this court is the great hall of the palace—the Dewannee Khas—208 ft. by 76, supported by 3 ranges of arcades of exquisite beauty. It is open on 3 sides, and with a niche for the throne at the back. This, like the hall at Allahabad, is now an arsenal, and reduced to as near a similarity as possible to those in our dockyards. Behind this are 2 smaller courts, the one containing the Dewannee Aum, or private hall of audience, the other the hareem. The hall in the former is one of the most elegant of Shah Jehan's build-

ings, being wholly of white marble inlaid with precious stones, and the design of the whole being in the best style of his reign.

The greatest care, however, was lavished on the hareem court, which measures 170 ft. by 235. Three sides of this are occupied by the residences of the ladies, not remarkable for size, nor, in their present state, for architectural beauty; but the fourth, overhanging the river, is occupied by three white marble pavilions of singular elegance, though it is not easy now to see them, some English officer having pitched upon the principal one as a residence, and having in consequence covered the polished marble and elegant arabesques of flowers inlaid in precious stones with thick coatings of that whitewash which was indispensable to his idea of comfort and elegant simplicity.

As in most Moorish palaces, the baths on one side of this court were the most elegant and elaborately decorated apartments in the palace. The baths have been destroyed, but the walls and roofs still show the elegance with which they were adorned.

The palace at Delhi is similar to this, but, being built by one king on a uniform plan, it is more regular, and on the whole certainly more magnificent. Its principal entrance faces the Chandnee Chouk, a splendid wide street, nearly a mile long, planted with two rows of trees, and with a canal of water flowing down its centre. Entering within the deeply-recessed portal you find yourself beneath the roof of a vaulted hall, similar in plan to a Gothic cathedral, many of which it exceeds in dimensions. In the centre it is crossed by another hall at right angles leading to the lateral courts, and at the upper end is the great court of the palace, rather larger than the one above described as existing at Agra. The whole forms perhaps the most noble entrance to a palace now known to exist anywhere. Opposite to this great entrance is the Dewannee Aum, or principal hall, a finer and larger one than that at Agra, and not yet turned into an arsenal; and in the centre of this, directly facing the entrance, is a niche richly ornamented, where on a platform of marble inlaid with precious stones once stood the famous peacock throne.

To the left of this great court is a smaller one, containing the private hall of audience, which is larger and richer than that at Agra, though not so elegant. It is round the frieze of this hall that the famous inscription runs, "If there is a heaven on earth, it is this, it is this"—which may be safely rendered into the sober English assertion that no palace now existing in the world possesses an apartment of such singular beauty and elegance.[1]

To the left of this again are the gardens, laid out in the formal style of the East, and the little golden mosque, an elaborate and beautiful piece of art, but far too small for such a palace, and very inferior to the Mootee Musjid at Agra. On the other side is the hareem court, to which no European is admitted; but if it bears the same relation to the rest as that at Agra, it must be the most splendid part of the whole.

[1] The throne here is a single block of rock crystal of exceeding elegance and beauty.

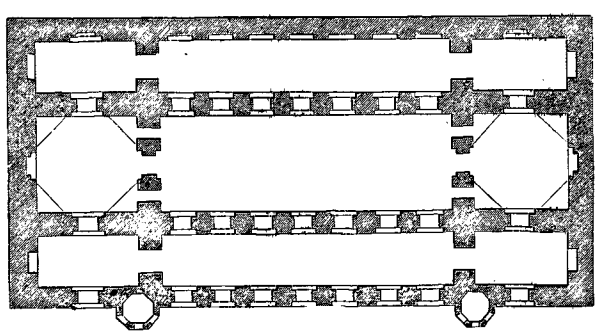
Along the river-front, as at Agra, are a number of marble pavilions, generally octagons, crowned with gilded domes, some of them of great beauty, but none, as far as can be seen, equal to that between the two inner courts at Agra. Of all Shah Jehan's buildings that is the most elaborate and the most highly ornamented, though perhaps for this very reason not the most to be admired; for though it is impossible to resist the fascination of so much ornament, all of the best kind and the richest materials, the forms and arrangements of the parts do not come up to the beauty of those buildings by which it is immediately surrounded.

We have scarcely any remains of Aurungzebe's own works, except, as before observed, a few additions to the palace at Delhi; but during his reign many splendid palaces were erected, both in the capital and elsewhere. The most extensive and splendid of these was that built by his aspiring but unfortunate son Dara Shekoh. It, however, was converted into the English residency; and so completely have plaster, whitewash, and improvements done their work, that it requires some ingenuity to find out that it was not wholly the work of the Anglo-Saxons.

In the town of Delhi many palaces of the age of Aurungzebe have escaped this profanation, but generally they are either in ruins or used as shops; and, though splendid, they show too clearly that degradation of style which had then fairly set in, and which is still more apparent in the modern capitals of Oude, Hydrabad, and other cities which have risen into importance during the last hundred years, than even here.

Even these capitals, however, are not without edifices of a palatial class which from their size and the picturesqueness of their forms deserve attention, and to an eye educated among the plaster glories of the Alhambra would seem objects of no small interest and beauty. Few, however, are built of either marble or squared stone; most of them are of brick or rubble-stone, and the ornaments in stucco, which, coupled with the inferiority of design, will not admit of their being admired in such immediate proximity with the glories of Agra and Delhi.

At Lucknow there is one hall that deserves to be treated as an



355. Plan of Imambara at Lucknow. From a plan by the Author. Scale 100 ft. to 1 in.

exception, not only from its size, but from the simplicity of its form and general grandeur of design. It is the Imambara or hall of the college. As seen by the plan (woodcut No. 355), the principal apartment is 162 ft. long by 53 ft. 6 in. wide. On the two sides are verandahs respectively 26 ft. 6 in. and 27 ft. 3 in. wide, and at each end an octagonal apartment, 53 ft. in diameter, the whole interior dimensions being thus 263 ft. by 145. This immense building is covered with vaults of very simple form and still simpler construction, being of a rubble or coarse concrete several feet in thickness, which is laid on a rude mould or *centering* of bricks and mud, and allowed to stand a year or two to dry and set. The centering is then removed, and the vault, being in one piece, stands without abutment or thrust, apparently a better and more durable form of roof than our most scientific Gothic vaulting; certainly far cheaper and far more easily made, as it is literally cast on a mud-form, which may be moulded into any shape the fancy of the architect may dictate.

CHAPTER V.

SPAIN.

CONTENTS.

Introductory remarks — Mosque at Cordoba — Palace at Zahra — Churches of Sta. Maria and Christo de la Luz at Toledo — Giralda at Seville — Palace of the Alcazar — The Alhambra — Sicily.

CHRONOLOGICAL MEMORANDA.

	DATES.		DATES.
Moors invade Spain	A.D. 711	Alcazar and Giralda at Seville (about)	A.D. 1200
Abd el Rahman commences mosque at Cordoba	786	Mohammed ben Alhamar commences Alhambra	1248
El Mansour enlarges mosque at Cordoba	876	Abon abd Allah, builder of Court of Lions, begins to reign	1325
Caliph Hakeem rebuilds sanctuary at Cordoba	965	Christian conquest of Granada	1492

THE next form of Saracenic art that now remains to be illustrated is that developed in Spain during the 8 centuries in which the Moors possessed or held a footing in that country, which they ennobled by their chivalry and adorned by their enlightened cultivation of the arts and sciences. As a style it is inferior to those we have been examining—never having reached the purity of form and elegance of detail attained in Egypt, nor that perfection in colouring which characterises the style of Persia, while it is certainly inferior both in elegance and richness to that of India. Still it is to us perhaps the most interesting of the whole, not only because of its proximity to our own shores, and our consequent greater familiarity with it, but because history, poetry, and painting have all combined to heighten its merits and fix its forms on our minds. Few are unacquainted with the brilliant daring of a handful of adventurers who in the 8th century subjugated Spain and nearly conquered Europe, and fewer still have listened without emotion to the sad tale of their expulsion. Much of the poetry and romance of the middle ages owes its existence to the struggles between the Christian and the Paynim knights; and in modern times travellers, painters, and architects have all lingered and expatiated on the beauties of the Alhambra, or dwelt in extasies on the mysterious magnificence of the mosque at Cordoba. Indeed no greater compliment could be paid to this style than that conveyed by the fact that, while not one work of any importance has been devoted to the Christian antiquities of Spain, even England has produced two such splendid illustrations of the Alhambra as those of

Murphy and Owen Jones—works far more magnificent than any devoted to our own national arts. In France, too, Girault de Prangey, Le Normand, Chapuy, and others have devoted themselves to the task; and even in Spain the Antigüedades Arabes en España is the best production of the class. So that we really are familiar with what these strangers did; while the cathedrals of Seville, Toledo, Burgos, and Leon are unmeasured and undrawn; and travellers hurrying to the Alhambra scarce condescend to alight from the diligence to cast a passing glance at their beauties.

This is indeed hardly fair; still it must be confessed it is impossible to come in contact with the brilliant productions of the fervid imagination of a Southern people without being captivated with their beauty, and there is a fascination in that exuberance of ornament and brilliancy of colour which it is impossible to resist when these are used with the daring which characterises their employment here. It is also true that these Moorish architects avoid the vulgarity which would inevitably result from such exuberance in the hands of Northern artists—a defect which the more delicately organised Asiatic as invariably escaped.

Cordoba.

As far as the history of architecture is concerned, by far the most interesting building in Spain is the mosque of Cordoba; it was the first important building commenced by the Moors, and was enlarged and ornamented by successive rulers, so that it contains specimens of all the styles current in Spain from the earliest times till the building of the Alhambra, which was in the latest age of Moorish art.

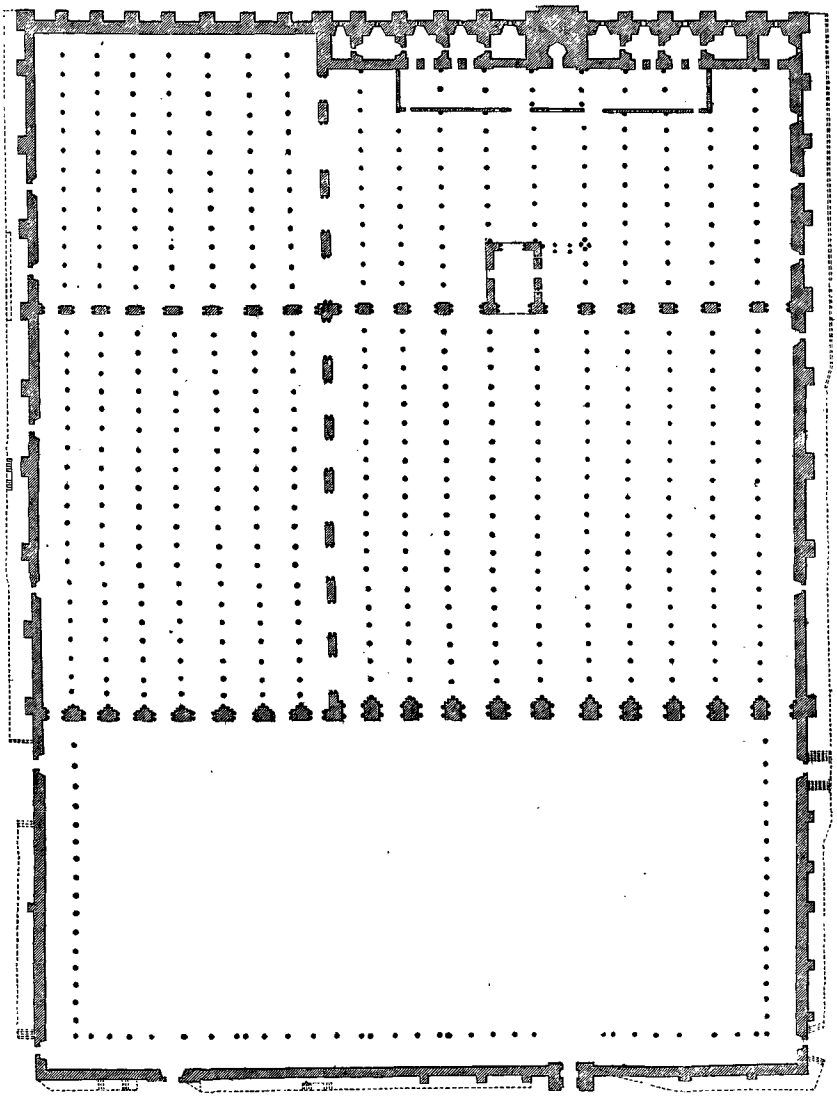
This celebrated mosque was commenced by Caliph Abd el Rahman in the year 786, and completed by his son Haschem, who died 796. The part built by them was the 11 western aisles, which then formed an edifice complete in itself, not unlike the Aksah at Jerusalem (except in the number of aisles), which the Caliph is said to have been anxious to surpass. It is by no means clear whether it had originally a court in front, but it is certain that the present court owes its existence to another Caliph of the same name in the year 957. As, however, the Christian basilicas of this age had almost always courts in front, it is more than probable that this mosque had one also; for the Mahometan mosques erected in countries previously Christian borrow much of their arrangement from these edifices.

The 8 eastern aisles were added by El Mansour (976—1001), thus completing the mosque to a parallelogram of 420 ft. by 375;[1] it covers therefore 157,500 square feet, being a larger superficies than that covered by any Christian church except St. Peter's at Rome. It is, however, sadly deficient in height, being only about 30 ft. high to

[1] Notwithstanding the number of plans published of this edifice, it is extremely difficult to ascertain its exact dimensions. Murphy in his text makes them 620×440, whereas the scale of his plans shows 570×405. Le Normand's two plans differ considerably from one another. The above is about the mean.

the roofs, and also wants subordination of parts, all the aisles being nearly of the same width, about 22 ft., except the central one of the original 11, which is 5 ft. wider; the 33 transverse aisles are all similar in breadth; so that altogether it is as deficient in design as the hall of a thousand columns of a Hindu temple, and produces pretty nearly the same effect.

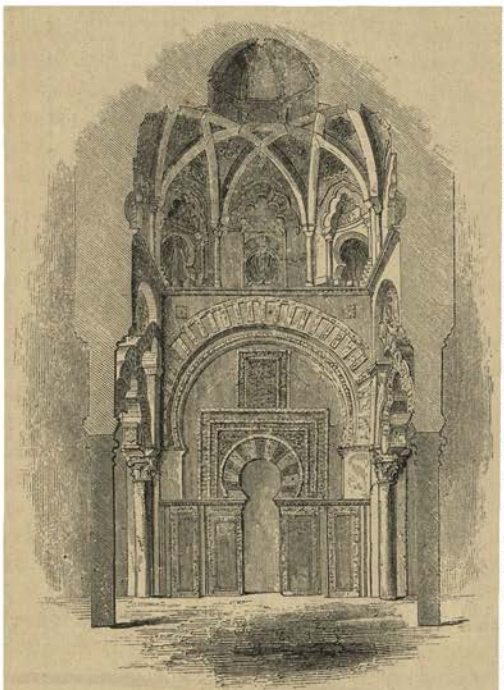
So completely has the building been altered by various repairs and the intrusion of a modern cathedral into its centre, that it is diffi-



356. Mosque at Cordoba. From a plan by G. Le Normand. Scale 100 ft. to 1 in.

cult to understand many of the original arrangements, especially how it was lighted—the few doors towards the court and on the sides would not suffice for this, and there is no appearance of a clerestory in the centre. The original roof, however, which was of wood richly carved and painted, has been removed, and brick vaults substituted. My own impression is that the upper part of the side-walls was originally an open arcade or colonnade on the two sides at least, which is confirmed by the fact that the side-aisles are narrower than the others exactly by the thickness of the walls; so that, if the walls were low, with columns standing on the outer edge, the width of these aisles would be uniform with the rest.

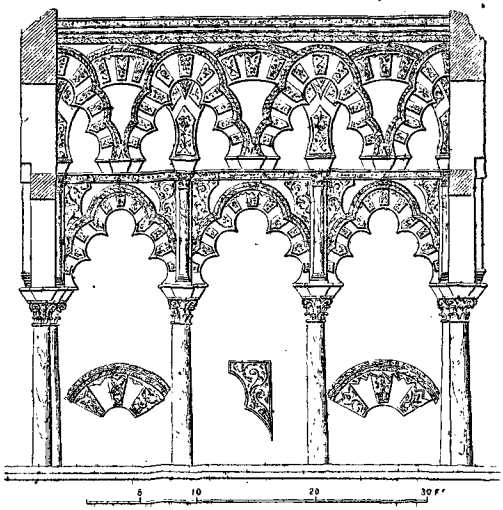
The Sanctuary with its appurtenances was rebuilt by the Caliph Hakeem, A.D. 965, and is the most beautiful and elaborate specimen of Moorish architecture in Spain and of the best age. In the great body of the mosque the architects employed columns brought from the ruined Roman cities of Merida and that neighbourhood, probably those supporting the porticos of the Forum and streets, or the courts of private houses. These being small and low, they were obliged to employ the expedient of placing arch over arch to eke out their height—to invent in short for the nonce that strange style which gives so peculiar a character to this building. Before the age of El Hakeem, however, the style had time to perfect itself; it was no longer dependent either on the materials or the forms of Roman art. They obtained also at this time the assistance of workmen from Byzantium, with which court the Caliphs of Spain were closely allied; and with their own exquisite taste they made the façade and niches of this part of the building the most elaborate and beautiful specimens of the art in Spain, and which, but for the smallness of the scale and confined nature of the design, might rival anything else found anywhere.



357. Interior of Sanctuary at Cordoba. From a drawing by Girault de Prangey.

The flowing and graceful forms of the design here exhibited are infinitely preferable to the interlacing straight lines of the Alhambra,

and the materials, which are in this place white and coloured marbles and true mosaic work, are very much to be preferred to the painted plaster of the other and more celebrated edifice.



358. Screen of the Chapel of Villa Viciosa, Mosque of Cordoba.

The third age of Moorish art is represented in this building by the chapel of Villa Viciosa, built apparently about the year 1200. It is evidently one of those raised platforms so common in Indian, and indeed in all royal mosques, where the king in his grandeur could pray uncontaminated by mixing with the vulgar crowd. Though a good deal altered and deranged by being converted into a Christian chapel, it still shows, in the age of its greatest purity, the germ of that style which afterwards was elaborated at Granada, and is generally considered as the type of the style in this country.

Before leaving this mosque it may be as well to remark that nowhere in any of these styles does the pointed arch appear, or only so timidly as to be quite the exception, not the rule. At an age when its employment was universal in the East, it is singular to observe how completely the Saracenic architects followed the traditions of the country in which they found themselves. At Cordoba they never threw off the influence of the Roman arch, though farther north the pointed arch is by no means uncommon.

Contemporary with the rebuilding of the sanctuary of the mosque was the erection of the great palace in the city of Zahra near Cordoba, which, if we may trust the accounts that have been handed down to us, was by far the most wonderful work of the Moors in Spain. This indeed might be expected, for, as has been before remarked, the palaces were the principal buildings of this people, and this being of the very best age might naturally be expected to excel any other edifice of theirs.

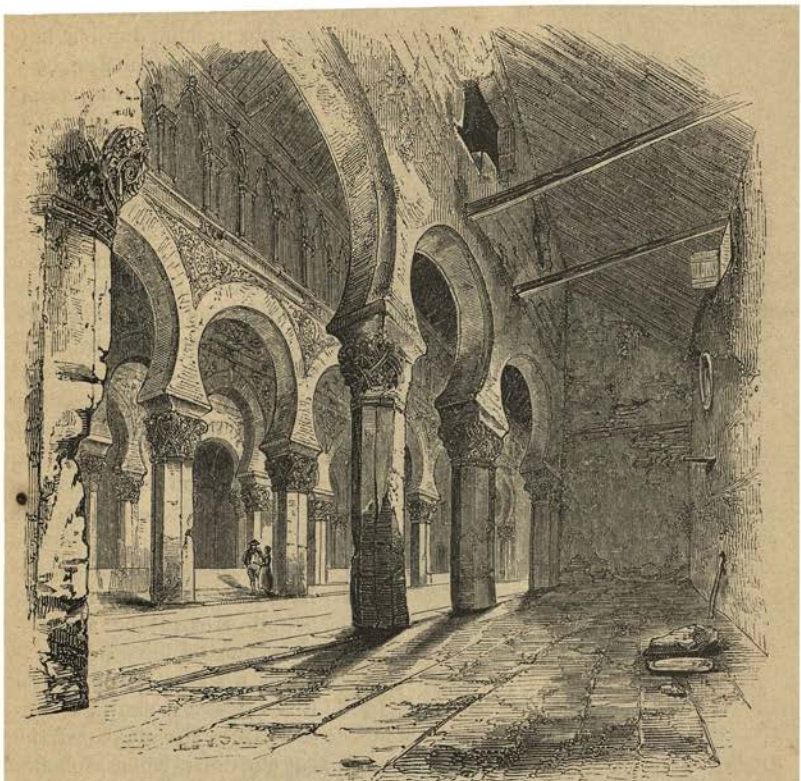
Not one stone now remains to mark even the spot where it stood. Its destruction commenced shortly after its completion in the troubles of the 11th century, even before the city fell into the hands of the Christians, and we depend therefore wholly on the Arabian historians from whom Conde and Murphy compiled their accounts; but as they, with Maccary, describe the mosque in the same page with the palace, and do not exaggerate nor say one word too much in praise of

the former, we cannot refuse credence to their description of the latter.

According to these authors the enclosing wall of the palace was 4000 ft. in length E. and W., and 2200 ft. N. and S. The greater part of this space was occupied by gardens, but these, with their marble fountains, kiosks, and ornaments of various kinds, must have surpassed in beauty, and perhaps even in cost, the more strictly architectural part of the building. 4300 columns of the most precious marbles supported the roofs of the halls; 1013 of these were brought from Africa, 19 from Rome, 140 were presented by the Emperor of Constantinople to Abd el Rahman, the princely founder of this sumptuous edifice. All the halls were paved with marbles in a thousand varied patterns. The walls too were of the same precious material, and ornamented with friezes of the most brilliant colours. The roofs, constructed of cedar, were ornamented with gilding on an azure ground, with damasked work and interlacing designs. All, in short, that the unbounded wealth of the caliphs at that period could command was lavished on this favourite retreat, and all that the art of Constantinople and Bagdad could contribute to aid the taste and power of execution of the Spanish Arabs was enlisted to make it the most perfect work of its age. Did this palace of Zahra now remain to us, we could afford to despise the Alhambra and all the works of that declining age of Moorish art.

Among other buildings contained within the great enclosure of the palace was a mosque. This had five aisles, the central one wider than the others. The total length from the Kiblah, or niche facing Mecca, to the opposite wall was 97 cubits (146 ft.), the breadth from E. to W. 49 cubits (74 ft.). It was finished in the year 941, and seems to have been one of the last works in the palace, having been commenced in 936. From this description it is clear that it was virtually a five-aisled church, and as no mention is made of the court we may fancy that, like the seven-aisled Aksah at Jerusalem, it never had that accompaniment, but was in reality only a basilica extended laterally, but on a small scale.

We may perhaps form some idea of what its original appearance was from the examination of what is now the church of Sta. Maria la Blanca at Toledo (woodcut, No. 359). Although this example is probably at least a century more modern, and, instead of marble columns and regal richness of decoration, is only of brick and stucco, still it is a five-aisled building, apparently twice the length of its breadth, and with a central aisle higher than the others. Altogether it is a favourable specimen of the Moorish style in Spain before it became degraded. Light was probably originally admitted by the clerestory, now blocked up; but it is not easy to be quite certain of this without a more careful examination than the building has yet been subjected to. Tradition says that it was originally a synagogue of the Jews. This is neither improbable nor of much importance, for the Jews were a numerous and powerful race during the Moorish domination, living in amity and peace with the Mahometans, and exercising the same arts in very nearly the same forms.



359. Sta. Maria la Blanca. From Villa Amil.

Another very interesting specimen of a Moorish mosque in Spain is that at Toledo, now known as the church of Christo de la Luz. It is a small square building with 4 stout short pillars on the floor, dividing it into 9 equal compartments, the central one of which is carried up higher than the others, and terminated by a sort of dome, if dome it can be called, for the Spanish architects, working almost wholly from Roman models, never adopted the Byzantine dome to any extent, except perhaps as the roofs of baths. In their mosques and palaces it is only used as an ornamental detail, and never constructed either of stone or brick-work, but merely a carpentry framing covered with stucco or mastic. The Spanish style shows in this a most essential difference from the Eastern forms, where the domes are so splendid and durably constructed, and where they constitute the actual roofs of the buildings.

Indeed vaulting does not seem under any circumstances to have been an art to which the Spanish Arabs ever paid any attention. Almost all their roofs are of wood carved and painted, or of stucco, not used to imitate stone, but as a legitimate mode of ceiling, which

it certainly is, and for fanciful and gorgeous decorations perhaps preferable to more durable, but less manageable materials.

360. Church of St. Christo de la Luz, Toledo. From a drawing by Girault de Prangey.

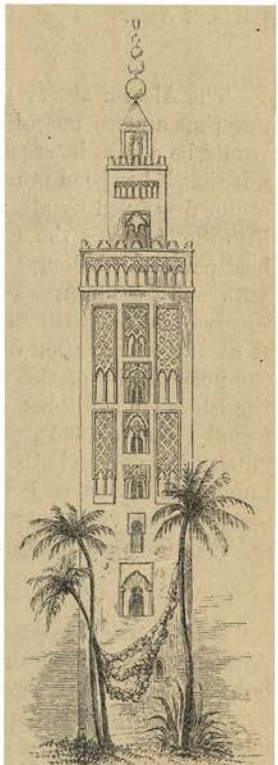
The art resulting from such materials is, it is true, more ephemeral, and must take a lower grade than that built up of materials that should last for ever; but such was not the aim of the gay and brilliant Moors, and we must judge them by their own standard, and by their success in attaining the object they aimed at.

In San Christo the walls are sufficiently solid, and plain, and on the whole the forms and decorations are judiciously and skilfully applied to attain the requisite height without raising the columns or giving any appearance of forced contrivances for that purpose. In this respect it shows a considerable advance on the design of the older part of the great mosque at Cordoba, being probably at least a century more modern; but it does not show that completeness which the art attained in the 10th century, when the sanctuary at Cordoba was built.

These four buildings mark four very distinct stages in the history of the art—the early mosque at Cordoba being the first, the San Christo de la Luz the second; the third and most perfect is well represented by all the building at the southern end of the mosque at Cordoba; the fourth by Sta. Maria la Blanca, where all trace of Roman and Byzantine art has wholly disappeared: a fifth stage is represented by another synagogue at Toledo called El Transitu. This last is so essentially merely a gorgeously ornamented room that it hardly deserves to be classed among monumental buildings, besides which this stage is so well illustrated in the palaces of Seville and Granada that it is not necessary to dwell on minor examples. Had the great mosques of Seville, Toledo, or Granada been spared to us, it would perhaps have been easier and better to restrict our illustrations to sacred edifices alone; but they—at least certainly the two first named—have wholly disappeared to make way for the splendid cathedrals which stand where they once stood, and which have obliterated nearly every trace of their previous existence. In the northern cities the national pride and stern bigotry of the Spaniards have long ago effaced all traces of this religion.

GIRALDA, SEVILLE.

None of the mosques we have been describing possess minarets, nor is there anything in Spain to replace the aspiring forms of the East except the Giralda at Seville. This is a more massive tower than is, I believe, to be found anywhere else as the work of a Moslem architect. At the base it is a square of about 45 ft., and rises without diminution to the height of 185 ft. from the ground; to this a belfry was added in 1568 by Ferdinand Riaz, adding 90 ft. to its height; and unfortunately we have nothing to enable us to restore with certainty the Saracenic termination which must have been displaced to make room for this. In the annexed woodcut (No. 361) it is represented as restored by Girault de Prangey, and from a comparison of it with the towers of Fez and Morocco, erected by the same king, it is more than probable it was thus terminated originally. It is difficult nevertheless to reconcile oneself to the idea that the upper part was not something more beautiful and more in accordance with its base. In the East the Mahometan architects certainly would have done something better; but here, from the want of familiarity with tower-architecture, and from their not possessing any circular or domical forms for the termination of towers or skylines, this inartistic form may probably have been adopted. The lower part is certainly much more beautiful; the walls are relieved with panels to just such an extent as is required for ornament without interfering with the construction or apparent solidity of the tower, and the windows are graceful and appropriate, and in such number as seems required. In this respect it contrasts pleasingly with the contemporary Campanile at Venice, which, though very nearly of the same dimensions, is lean and bald compared with this tower at Seville. So indeed are most of the Italian towers of the same age. All these towers seem to have been erected for very analogous purposes, for the Giralda can never have been meant as the minaret of a mosque, to be used for the call to prayer; nor can we admit the destination sometimes ascribed to it by those who surmise that it may have been merely meant for an observatory. Most probably it was a pillar of victory, or a tower symbolical of dominion and power, like so many others we have had occasion to allude to in the previous pages of this work. Indeed the tradition is that it was built by the King Yousouf to celebrate his



361. Giralda, Seville. From a drawing by Girault de Prangey.

famous victory of Alarcos, gained in the year 1195, in which year the building of the tower was commenced. As such it is superior to most of those erected in Europe in the middle ages, but far inferior, except in size, to the Kootub Minar, and many others still found in various parts of Asia.

Alcazar at Seville.

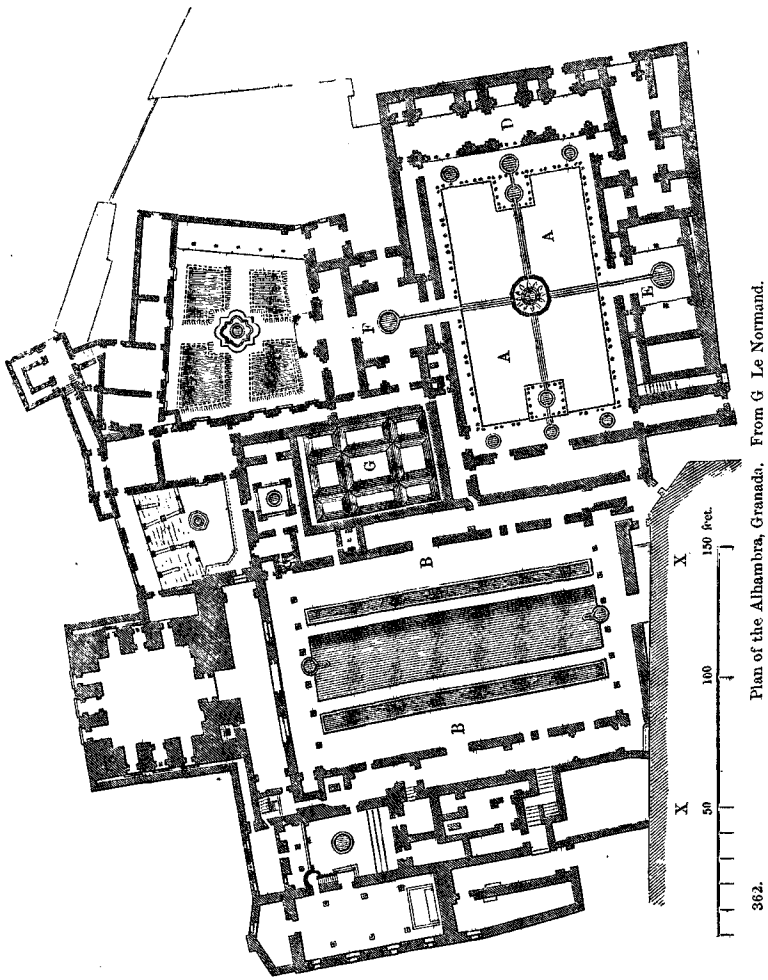
The Alcazar at Seville was an older palace, and perhaps also at one time a more magnificent one, than the Alhambra itself. Hence it would be a most interesting example of the Mahometan style, were it not that it has been much dilapidated in subsequent ages, and its character destroyed by alterations and so-called improvements after it fell into the hands of the Christians. It is more than probable that the best parts of it belong to the same age as the Giralda—the end of the 12th and beginning of the 13th century—and that it continued to receive additions till the city was taken by the Christians, A.D. 1248. A careful examination of the building by some one intimate with all the peculiarities of the style might distinguish the ancient parts from the Christian additions, especially those perpetrated by Don Pedro the Cruel (1353 to 1364), who in an inscription on the walls claims the merit of having rebuilt it. Thus the history of this palace is not of much importance, as it is not so much older than the Alhambra as to mark another style, nor so complete as to enable us to judge of the effect of the art as perfectly as we can in that celebrated palace.

Alhambra.

It was after his expulsion from Seville (1248) that Mahomed ben Alhamar commenced the present citadel of the Alhambra, at which both he and his successors worked continually till the end of the 13th century. It does not appear that any of the more important buildings now found there were erected by these monarchs. From the accession of Aboul Walid (1309) to the death of Yousouf (1354) the works of the present palace seem to have been carried on uninterruptedly, and it is to this half-century that we must refer all the essential parts of the palace we now find in the citadel.

As will be seen from the annexed plan it consists principally of two oblong courts; the richest and most beautiful, that of the Lions (A A), running east and west, was built by Abou abd Allah (1325 to 1333). The other, the court of the Alberca (B B), at right angles to this, is plainer and probably earlier. Restorers generally add a third court, corresponding with that of the Lions, which they say was removed to allow of the erection of the palace of Charles V. (X X), which now protrudes its formal mass most unpleasingly among the light and airy constructions of the Moors. My own impression is that, if anything did exist here, it was the mosque, which we miss, although we know that it existed, and tradition points to this side as its locality, though it certainly was not the apartment at that angle which now goes by that name. It must, like all Spanish mosques, have faced the south, and was most probably destroyed by the first Christian con-

querors of Granada. Indeed it is by no means certain that the Christian palace above mentioned, which stands strangely unsymmetrically with



Plan of the Alhambra, Granada. From G Le Normand.

the other buildings, does not follow the lines of the old mosque. This could be in great measure determined if we could rely upon the bearings of the different courts and buildings as given in the compasses attached to any of the plans hitherto published.

The principal entrance to the Alhambra seems always to have been at the southern end of the court of the Alberca. This part does seem to have been altered or pulled down to make way for the palace of Charles V. The court was originally called, apparently from the pool of water which always occupied its centre, El Birket. It is 138 ft. long by 74 wide, the longer sides being singularly, and in such a place ungracefully, plain. The end to the south terminates

in a double arcade of very beautiful design; and to the north with a similar one, but only one story in height, crowned by the tower enclosing the great hall of the ambassadors (C), which is the great object to which this court extends. This is a hall 35 ft. square, and about 60 in height, roofed by a polygonal dome of great beauty of design, and covered, like the walls, with arabesque patterns of the greatest beauty. One of its most charming peculiarities, however, is the deeply-recessed windows, looking down on the city, and beyond that commanding a view of the delicious Vega and the mountains that bound it. It is one of the most beautiful scenes in the world, of which the architect availed himself with the eye of a true artist, who knew how to combine nature with art to make a perfect whole.

The other court, called that of the Lions (A A), from the beautiful fountain supported by 12 conventional-looking animals so called, is smaller (115 ft. by 66 from wall to wall), but far more beautiful and elaborate than the other; indeed, with the apartments that surround it, this is the gem of Arabian art in Spain—its most beautiful and most perfect example. It has, however, two defects which take it entirely out of the range of monumental art: the first is its size, which is barely that of a modern parish church, and smaller than many ball-rooms; the second is its materials, which is only wood covered with stucco. In this respect the Alhambra forms a perfect contrast to such a building as the Hall at Karnac, or any of the greater monumental edifices of the ancient world, and, judged by the same standard, would be found lamentably deficient. But in fact there is no comparison applicable between objects so totally different. Each is a true representative of the feeling and character of the people by which it was raised. The Saracenic plaster hall would be totally out of place and contemptible beside the great temple-palace of Thebes. No less would the granite works of Egypt be considered monuments of ill-directed labour if placed in the palaces of the gay and luxurious Arab fatalist, to whom the present was everything, and with whom the enjoyment of the passing hour was all in all.

The shafts of the pillars that surround the Court of Lions are far from being graceful in themselves, being more like the cast-iron supports of our shops than anything else. Their capitals, however, are very gracefully moulded, and of a form admirably adapted for the support of the superstructure they were destined to bear, and the pillars themselves are so gracefully grouped, alternately single and coupled, and their alignment is so completely broken by the projecting portico at each end, that they cease to be prominent objects in themselves, and become mere accessory details. The arcades which they support are moulded in stucco with a richness and beauty of ornament that is unrivalled. There is in this no offence to good taste; indeed work executed in plaster *ought* to be richly decorated, otherwise it is an unsuccessful attempt to imitate the simplicity and power that belongs to more durable and more solid materials. It should therefore always be covered with ornaments, and never was so elaborated with more taste and consistence than is found here.

At the upper end of this court is an oblong hall, called that of Judgment (D), and on either side two smaller rooms, that of the Abencerrages (E) on the south, and that called "of the Two Sisters" (F) opposite, the latter being the most varied and elegant apartment of the whole palace. The walls of all these are ornamented with geometric and flowing patterns of very great beauty and richness, and applied with unexceptionable taste for such a decoration; but it is on the roofs and larger arcades that the fatal facility of plaster becomes more apparent. Instead of the simple curves of the dome, the roofs are made up of honeycombed or stalactite patterns, which look more like natural rock-work than the forms of an art, which should be always more or less formal and comprehensible at a glance, at least in their greater lines and divisions. There is perhaps no instance where a Saracenic architect has so nearly approached the limits of good taste as here, and it requires all the countervailing elements of situation and comparison with other objects to redeem it from the charge of having exceeded them.

Behind the Hall of the Two Sisters, and on a lower level, are situated the baths (G) of the palace—beautiful in some respects, and appropriately adorned, but scarcely worthy, I cannot help thinking, of such a palace as this.

Besides the edifices mentioned above, there is scarcely a town in Spain that once was occupied by the Moors that does not still retain some traces of the art of this people. These traces, however, are generally found in the remains of baths, which from their nature were more solidly built than their other edifices, and generally were vaulted with bricks—frequently with octagonal domes supported on 12 pillars, as those in the East. These in consequence have survived, while their frailer palaces have yielded to the influence of time, and their mosques have disappeared before the ruthless bigotry of their successors. None of these seem to be of sufficient importance to require notice.

We miss entirely in Spain the tombs which in the last chapter formed so important a feature. This total absence of monuments of this class is a certain indication that there was no mixture of Tartar blood in the veins of the Moors who conquered and held Spain. This same peculiarity imparts to the whole style of Saracenic art in Spain its distinctive character. But for this the style would have been more solid and monumental. Domes would have been more in favour, and, in short, the Spanish Moors would have left behind them remains more nearly corresponding to those of the other Mahometan countries which have already been noticed.[1]

[1] Nothing need be said here of La Cuba and La Ziza, and other buildings in Sicily, which, though usually ascribed to the Moors, have now been ascertained to have been built by the Normans after their conquest of the island in the 11th century. They are Moorish in style, it is true, and were probably erected by Moorish artists, but so were many churches and chapels in Spain which we shall have occasion to mention in a future part of the work; and I am not aware of any building now extant there which can be safely ascribed to the time when the island was held by the Moslems, and which was then erected by them for their own purposes. Till such is ascertained Sicily of course does not come within the part of our subject which we are now considering.

CHAPTER VI.

TURKEY.

CONTENTS.

Peculiarities of style — Mosque of Soliman — Mosque of Achmet — Other mosques.

CHRONOLOGICAL MEMORANDA.

	DATES.		DATES.
Turkish conquest of Constantinople	A.D. 1453	Soliman the Magnificent	A.D. 1530
Bajazet begins to reign	1481	Achmet	1603

At the very time when the Moors were being expelled from Spain, and the arts which they had introduced into Europe, and the sciences which they had cultivated, were perishing under the intolerant bigotry of those who dispossessed them of their fair realm, a new and nobler province was by the conquest of Constantinople being added to those already occupied by the followers of Mahomet. Thus what was lost in the West was more than compensated by the gain in the East; and at an earlier age, or by another people, the gain to the cause of the Mahometans might have been incalculably great. It was, however, at a time when Christian Europe was awakening from the long slumber of the dark ages, and was sufficiently organised to resist the encroachment of a foreign invader. It is more to the purpose of our present subject to observe that at that period the art of Christian Europe was past its zenith. Its decay had been very rapid, and was felt even in the remote corner of Europe which the Turks had seized. Hence the materials which they had to work upon in producing their new style were of a very debased description. Even without this, it is by no means clear that the Turks would ever have done much good in the way of art. Of all the people who embraced the faith of Islam, they certainly were, and are, the most stolid and least refined, and the least capable consequently of elaborating such an art as we find in all other countries subject to this faith.

Had Constantinople fallen at an earlier age into the hands of the Arabs or Persians, the models of architecture and the treasures of art it contained would have been turned to far better account than they have been; but even as it is, the Turks have erected mosques and buildings well worthy of far more attention than they have hitherto received.

One of the most remarkable circumstances connected with their

style is, that we find here exactly the same phenomena in the 16th century that we remarked in the 7th and 8th. At both these eras the Mahometans adopted and suited to their purposes the styles of the countries in which they located themselves. This was not by any means a necessity imposed upon the Turks by the absence of any Saracenic style which they might have imitated. In that very part of the world such a style, complete in all its parts, and having acquired a perfect individuality of expression, had existed for six or seven centuries, and the very Turks themselves had for at least two centuries in Asia Minor been building mosques with light piers and pointed arches supporting airy domes with coloured walls and gilded roofs. All this they forgot and abandoned the moment they established themselves in Europe. If a pointed arch is there found, it is an accident; colour is rarely used, externally at least; the plan and form of their mosques are entirely new to them; and a new style springs up, differing in almost every important characteristic from anything ever practised by a Mahometan people before. They do not even seem to have employed the Greek architects of that day. Had they done so, their mosques would have had the tall cupolas and light arcades of the Theotocos and more modern Greek churches; but it was not this that they copied; they went direct to Sta. Sophia, the greatest and most important model of the style, though one which the Greeks themselves had long ceased to imitate, and all their subsequent buildings are copies, more or less exact, of the great creation of Justinian.

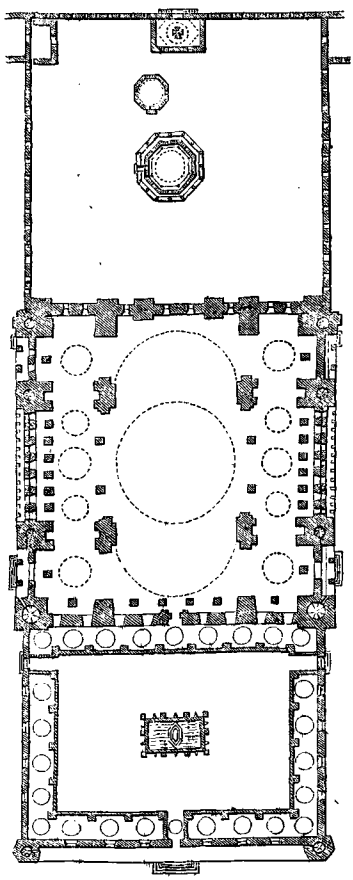
Having no drawings on which dependence can be placed, it is difficult to say what the mosque of Mahomet II. is, though, as the earliest, it is the most interesting of its class. That of Soliman, 1550–1555, is avowedly a copy of Sta. Sophia, not only in plan and form, but even in size, though it surpasses the original both in details and construction. When Achmet built his great mosque in 1610, the style had acquired a slight degree of independence. The idea of St. Sophia was still there; but modified both in form and detail, so that it was becoming a consistent example of an independent style. After another century of progress we should have lost the type of the old Justinian church, as completely in the mosques of Constantinople as in the Taje at Agra, and perhaps for as noble a style; but unfortunately the Levant, and especially this great capital, always swarms with Frankish renegades, especially Italians, many of whom, from the superior constructive skill of Western Europe, have been employed as engineers and master builders, and in this capacity have not failed to introduce their favourite Renaissance. Roman pillars reappeared shortly after the time of Achmet, with Italian pilasters, and balusters, and consoles; so that before Osman built his mosque, about a century later, the style had received its death-blow.

It is very much to be regretted that we have neither any verbal account of the mosques of Constantinople, nor any illustrations which can be depended upon. The best are those published by Grelot, as long ago as 1680; but like all works of that class in that age, they are very imperfect: since then we have had nothing but flippant remarks

or picturesque sketches, far more likely to mislead than to instruct; and, indeed, it still remains for some traveller to visit Constantinople, with sufficient taste to discriminate what is good from what is bad, with sufficient knowledge of architecture to describe intelligibly what he sees, and, above all, with sufficient love of truth to induce him to ascertain measurements and facts, and to record them honestly.

The earliest of the Turkish mosques is that of Mahomet II., or of the Conqueror, as it is called (1465–69). Its dimensions seem small, probably about 100 ft. by 150; and I am not aware that it is distinguished by any architectural peculiarity, though as the first it would form an interesting commencement to the series, if it were known and could be estimated.

The next in the series is that of Soliman the Magnificent (1530–55), which is probably the finest in many respects of those built by the Turks in Constantinople. As will be seen from the annexed plan (copied from Grelot) it is nearly a square—227 ft. by 234, it is said—and, except in the absence of the apse and smaller width of the side aisles, it is nearly an exact copy of Sta. Sophia, in so far at least as its general ordinance is concerned.



363. Mosque of Soliman. From Grelot's Constantinople. No scale.

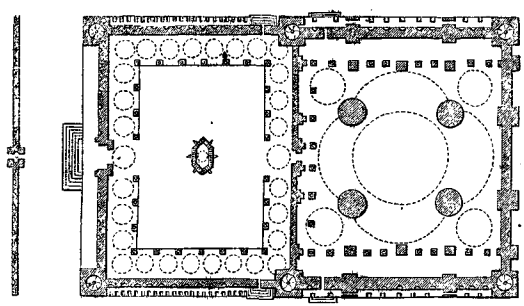
The great dome, which seems to be about 100 ft. in diameter, is supported by four great piers of masonry, supporting four arches. The corners of the square made by these arches are filled up with *pendentives*, on which the dome itself is placed. Against two of these arches are placed two semi-domes, of the same diameter as the great one—which, with the thickness of the pier arches, make up the whole internal length of the mosque. Between the other two arches of the great dome are placed great granite pillars of one block each, said to be 60 ft. in height, joined by arches, on which rests a wall-space filling up the side arches of the dome; and in these walls are placed the principal windows that light the centre of the building. There does not seem to be any second gallery, and altogether the arrangement seems to be a considerable improvement on that of Sta. Sophia.

In front of the mosque is a square court with a fountain in the

centre, of the same width as the mosque, though less in breadth. This was an invariable accompaniment of all Christian basilicas of the age of Justinian, to which, in the buildings now under consideration, the Turks practically returned. In the earlier centuries of the Hejra, as we have seen above, the court became the mosque itself, the basilica part having been gradually diminished till it became evanescent. Here, however, it reappears in its proper character and place, as of old, with merely the adjunct of a minaret at each angle. In this instance the two minarets at the outer angles are smaller than those attached to the mosque, which is a pleasing though not common mode of subordination.

In the garden behind the mosque, too, we again come on the well-known feature of the octagonal tombs of the founders and their families, which we missed in Spain, but which occur here again now that we have got among a race belonging to the great Tartar family of mankind.

The next is the mosque of Achmet, who ascended the throne in 1603.



364. Mosque of Achmet. From Grelot's Constantinople. No scale.

It seems to be of about the same dimensions as the mosque of Soliman, but differs considerably from it in arrangement; the central dome is smaller, not exceeding 80 ft. in diameter, but is surrounded by 4 semi-domes, one on each side, so as practically to make up a great domical roof of not less than 160 ft. in diameter, and there are 4 smaller domes on the corners, besides a broad and handsome gallery on each side, making it longer—as it should be—in the direction at right angles to Mecca.

This mode of arranging the subordinate domes with the central one is, I feel convinced, the most beautiful form of roofing yet invented by man, and the most capable of being elaborated into forms of beauty and grace. It would have required, however, at least another century's perseverance in the track before the Turks, or any other people, could successfully elaborate a construction so novel in many respects. Here it has certainly not been perfectly successful; the great piers that support the dome are not only inelegant, but inappropriate, as they do not bring down the lines of the roof to the

ground, and the domes themselves are not so graceful as they might be. But the greatest defect is, probably, the one most difficult to remedy, being the extremely scattered mode in which the light is admitted. All these mosques have 24 windows at the springing of the great dome, and 12 in each of the semi-domes, besides numerous small windows in the walls and subordinate domes, making altogether a number of small openings, very destructive of repose in the architectural effect.

The court here is similar to that of the last described mosque; but this one alone, of all those of the Turkish empire (except Mecca), possesses six minarets, four at the angles of the court, and two at the angles of the building behind. These too seem to be more than usually graceful in design, and add very much to the beauty of the whole. So far as we can judge, all the details of the mosque are better designed and more consistent in themselves than any of those which either came before or were built after its erection. Indeed, it may be fairly said to be the best and most complete specimen of a style found nowhere else, and in no other age than that of its illustrious founder.

Scarcely less important than these, though even less known, are the great mosque of Bajazet (1481-1512), and that built by Soliman the Magnificent, in 1544, in memory of his son Mustapha, whose name it bears, and for whom it serves as a sepulchre. The mosque of Selim II. is also well worthy of attention (1566–1574), though inferior to that of Validé, the mother of Mahomet IV., to whose pious enthusiasm Constantinople is indebted for one of the most splendid religious foundations it possesses, of which her mosque forms a part. The mosque of Osman, 1755, has been already alluded to as showing the transformation which the Turkish style underwent from the introduction of Frankish forms; and from this time, though many magnificent buildings have been erected, they show more or less the prevalence of that taste which has destroyed all originality and architectural beauty throughout Europe.

Besides these imperial mosques of the capital, almost every important city of the empire possesses one or more worthy of study in proportion to their age, and many of them really beautiful and graceful edifices. But with scarcely an exception, these are utterly unknown, or at least no sufficient materials have been published to enable us either to classify or describe them with accuracy.

The same remarks apply to nearly all the civil buildings of the Turkish empire, with the exception perhaps of the fountains. That of the Seraglio has often been drawn, and generally their light and sparkling architecture seems to have attracted more attention than the more monumental, but less ornate style of the mosques. In their fountains the Turks seem to have given rein to that playful fancy which characterises the architecture of Cairo or Granada, but which, from some motive not usual in the East, they seem to have restrained in their religious edifices.

In the interior of their dwellings they seem also to have revelled

in exuberance of ornament, but in a lighter and even more ephemeral style than is found elsewhere in Saracenic art, and therefore coming more under the head of decorative than of monumental art. Like their picturesque dresses and arms, this is fast disappearing before the dingy uniformity of Western utilitarian practices; and one must travel far indeed to escape the influence of Paris or of Birmingham. Still there no doubt remain, in almost every province of the empire, specimens a century or two old, which would display all that taste and beauty we so admire in other countries of the East and South. They have hitherto been overlooked, and perhaps, after all, do not deserve so much attention as the earlier Christian relics of the same localities.

CONCLUSION.

We have now run rapidly, and it must be confessed somewhat imperfectly, through all the varying forms which Mahometan art assumed during the 1000 years in which it flourished. We have seen it spreading itself in a belt across the Old World, from the shores of the Atlantic to those of the Bay of Bengal. We have seen it gathering inspiration and culling beauties from all those styles which preceded it in the countries where the Moslems settled, first employing native artists and adopting native forms, but gradually working up those forms into something new, something more beautiful and more consistent with their wants and purposes, rejecting whatever was incongruous, and extracting the beauties they required. Thus it was that the architecture of the Mahometans was at first Roman, Byzantine, Persian, or Indian, according to the country where it is found; but in all these countries we find it elaborated into a perfectly complete and original style, in the later examples of which it is only possible to detect the first elements by tracing it back through its preceding stages to the fountain head.

The people who effected all this can in no instance be called a great people; nor do their works ever reach true grandeur, nor even affect sublimity. Beauty was their aim; and gifted, as nearly all the nations of the Moslem world were, with an exquisite sensibility and the keenest perception of the beautiful, they attained to this by means of a degree of taste and refinement which seem innate in them. The grace and elegance of their architecture has never been surpassed. In the higher qualities of art, this style is certainly inferior to the Egyptian, Grecian, or Gothic style; but it surpasses them all in endless fertility of invention, as well as in the variety of ornament and detail which lend such a charm to every work they ever produced.

In this, and in many other respects, the style is worthy of far more attention than it has hitherto received; but more perhaps from what it is capable of suggesting, than from what it has actually accomplished. It never has been in the hands of a great people who could impart greatness to everything they did. The Mahometan nations were led by their exuberance of fancy, and impatience of all restraint,

to try every form, to attempt to fix every floating idea, and to take advantage of every suggestion either of nature or of art. Hence that boundless multiplicity of detail which Saracenic architecture presents, and the innumerable hints it affords for those who know that art is not confined to one or two forms, and is not to be confined by figures or by rules, but is everywhere and in everything for those who seek it honestly and for its own sake.

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